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AUTHOR	Steinberg, A.; And Others
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ABSTRACT

This instructional package is one of two designed for low reader students (those reading at grade level 3-6) in the vocational area of building maintenance and engineering. The forty-four learning modules are organized into eleven units: chalkboards; carpet care; office cleaning; grounds; sanitation; boiler maintenance and operation; power and hand tools; cabinet construction; repair of damaged furniture; windows; and door maintenance. Each module includes these elements: a performance objective page telling what will be learned, what materials are needed, and how the student will be evaluated; and job step pages which provide information needed to perform the activity and detail the steps necessary to do the task. Illustrations are extensively used. (This document and CE 017 566 are one of four sets of learning modules on building maintenance and engineering. The other three sets are written in formats designed for educable mentally impaired, visually impaired, and regular vocational students. The modules are part of a total set of over 1,300 written for different student populations. Dietetic assistant, small engine repair, medical assistant, and graphics are the other vocational areas covered.) (JH)

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ED158089

CAPITAL AREA CAREER CENTER
Ingham Intermediate School District
611 Hagadorn Road
Mason, Michigan 48854

TO:

MULTIPLE LEARNING STRATEGIES PROJECT

BUILDING MAINTENANCE & ENGINEERING
Low Reader
[VOL. 2]
2

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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CE 017 567

building maintenance & engineering

unit: CHALKBOARD CARE

capital area career center

module: 2201 04 001 3 date: 1-7-77 level:

skill title: "BREAKING IN" A NEW CHALKBOARD

developed & written by: A. STEINBERG

visuals by: SHERRI BAKER

WORD GUIDE

CHAMOIS - A SOFT CLOTH MADE FROM ANIMAL SKINS, USED FOR RUBBING OR BUFFING.

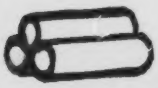
"BREAK IN" - TO PREPARE AN ITEM FOR LATER USE.

PERFORMANCE OBJECTIVE

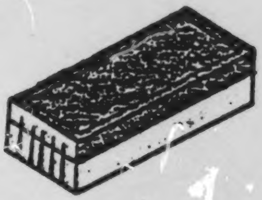
YOU ARE GOING TO LEARN:

HOW TO "BREAK IN" A NEW CHALKBOARD.

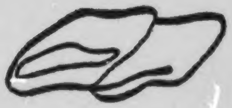
AND IN ORDER TO DO THIS YOU WILL NEED:



3 TO 4 STICKS OF CHALK



FELT ERASER



CHAMOIS OR
COTTON CLOTH

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE COMPLETED THE JOB STEPS BY "BREAKING IN" A NEW CHALKBOARD.

INFORMATION

WHY DO YOU "BREAK IN" A NEW CHALKBOARD?

IF YOU DO NOT "BREAK IN" A NEW CHALKBOARD, THE WRITING ON THE BOARD WILL NOT ERASE COMPLETELY.

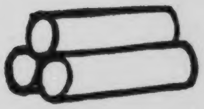
BY "BREAKING IN" A NEW CHALKBOARD, YOU CAN BE SURE THE WRITING ON THE BOARD WILL ERASE COMPLETELY.

JOB STEPS

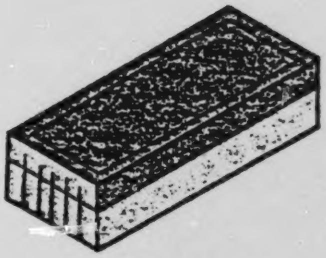
WORD GUIDE

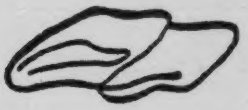
SURFACE - THE OUTER FACE OF SOMETHING.

CIRCULAR MOTION - MOVING IN A CIRCLE.

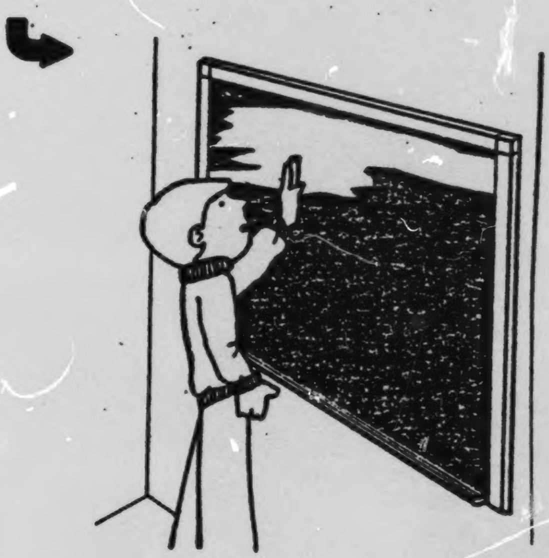


1. GET THE NECESSARY EQUIPMENT FOR "BREAKING IN" A NEW CHALKBOARD AND GO TO YOUR JOB AREA.

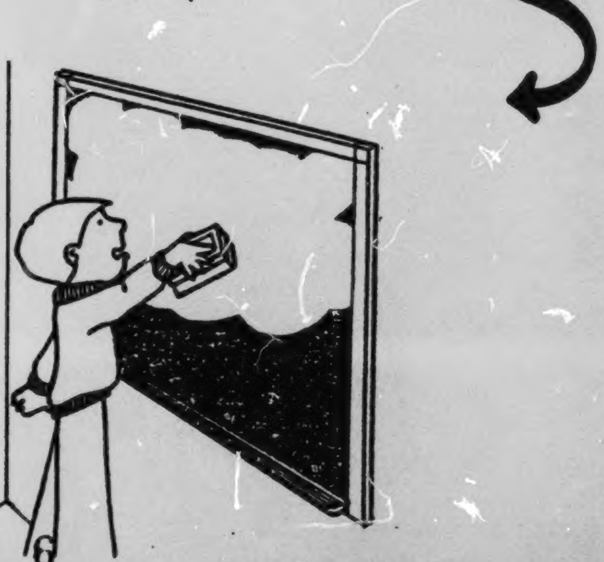




2. USING THE SIDE OF A PIECE OF CHALK, COVER THE WHOLE SURFACE OF THE BOARD WITH CHALK.

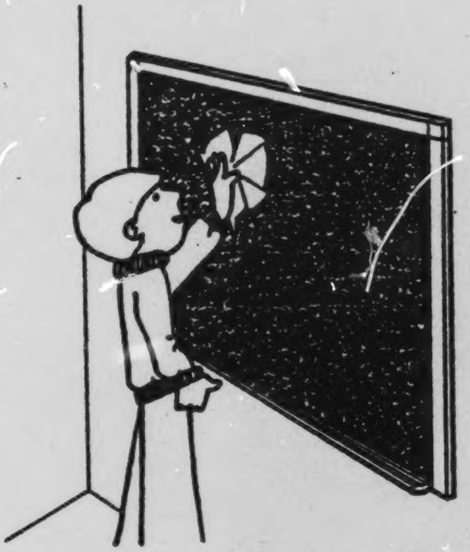


3. USING THE ERASER, MAKE CIRCULAR MOTIONS RUBBING THE CHALK INTO THE WHOLE SURFACE OF THE BOARD.



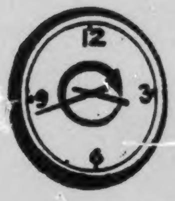
JOB STEPS

4. USING THE CHAMOIS OR COTTON CLOTH, RUB THE WHOLE SURFACE OF THE CHALKBOARD.



5. DO STEPS 2, 3, AND 4 OVER.

6. WHEN "BREAKING IN" A CHALKBOARD, DO NOT LEAVE THE CHALK ON THE SURFACE OF THE BOARD OVER NIGHT.



7. DO NOT WASH THE CHALKBOARD FOR AT LEAST A WEEK.

s	m	t	w	t	f	s
X	X	X	X	X	X	X

8. RETURN ALL EQUIPMENT. BE SURE IT IS CLEANED.

building maintenance & engineering

unit: CHALKBOARD CARE

capital area career center

module: 2201 C+ 002 3 date: 1-7-77 level:

skill title: WASHING A CHALKBOARD

developed & written by: A. STEINBERG

visuals by: SHERRI BAKER

WORD GUIDE

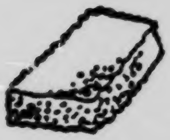
STREAKS - LONG, NARROW MARKS OR SMEARS.

PERFORMANCE OBJECTIVE

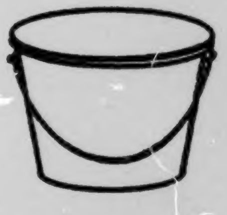
YOU ARE GOING TO LEARN:

TO WASH A CHALKBOARD.

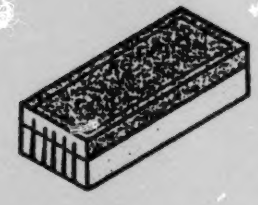
AND IN ORDER TO DO THIS YOU WILL NEED:



SPONGE



PAIL



FELT ERASER

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE WASHED A CHALKBOARD SO THAT IT IS CLEAN AND WITHOUT STREAKS.

INFORMATION

WHY DO YOU WASH A CHALKBOARD?

BECAUSE OLD CHALK MUST BE REMOVED FROM THE CHALKBOARD. ERASING THE BOARD WITH A FELT ERASER WILL NOT CLEAN ALL THE CHALK OFF THE BOARD.

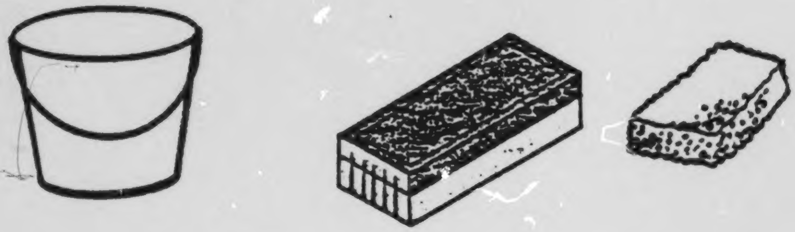
NEW CHALK WRITING WILL SHOW UP MORE CLEARLY ON A CLEAN BOARD.

JOB STEPS

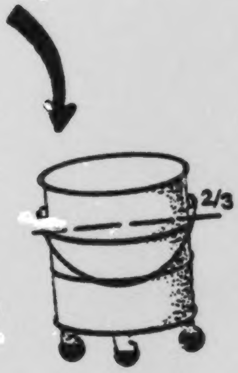
WORD GUIDE

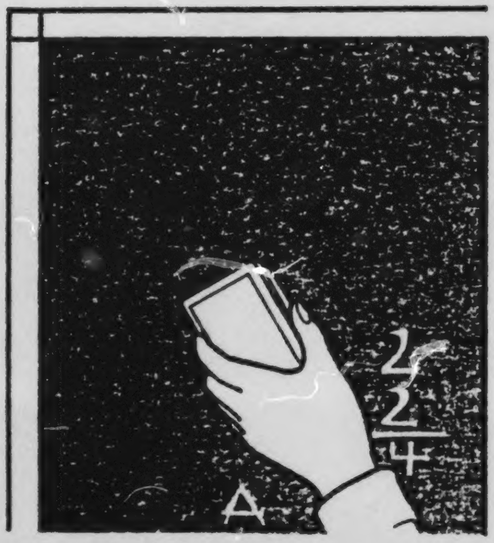
MOTION - MOVEMENT WITH HANDS AND ARMS

1. GET THE EQUIPMENT FOR WASHING A CHALKBOARD, AND GO TO YOUR WORK AREA.



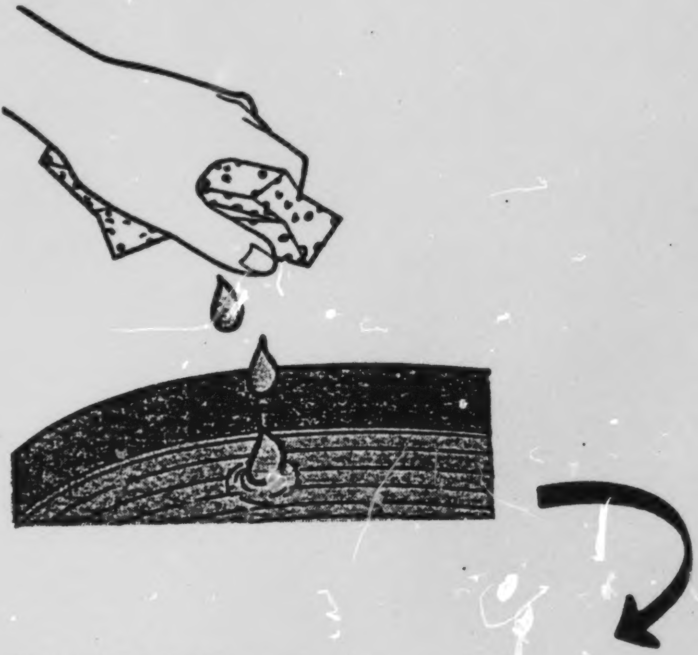
2. FILL A PAIL 2/3 FULL WITH COLD WATER.



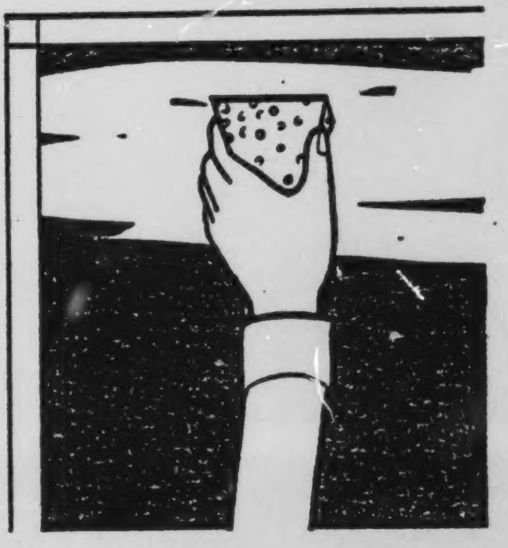


3. ERASE THE BOARD.

DIP SPONGE INTO A PAIL OF WATER AND SQUEEZE OUT THE EXTRA WATER UNTIL THE SPONGE IS ALMOST DRY.

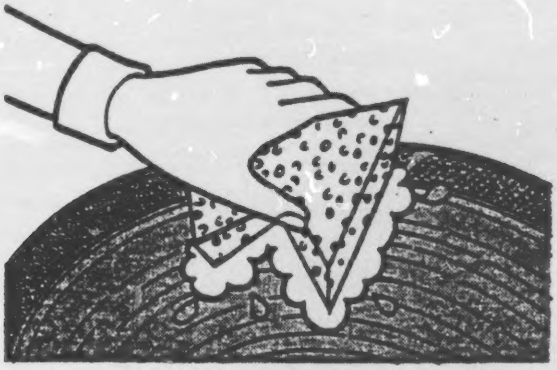


5. START AT THE TOP LEFT-HAND CORNER OF THE CHALKBOARD. MOVING ACROSS THE TOP OF THE BOARD IN A STRAIGHT LINE, WIPE THE CHALKBOARD.

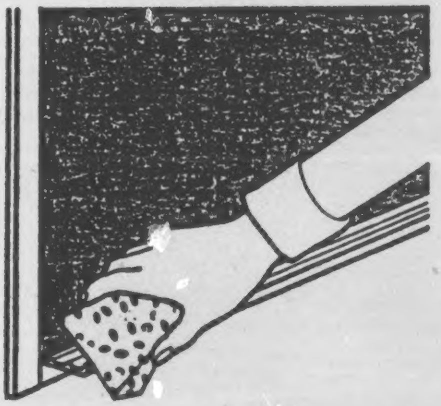


JOB STEPS

6. WHEN YOUR SPONGE BECOMES DIRTY WITH CHALK, WET THE SPONGE AND CLEAN OUT THE DIRT. CONTINUE WITH STEP 5 UNTIL THE WHOLE BOARD IS CLEAN. YOU MAY NEED TO CHANGE YOUR WATER OFTEN.



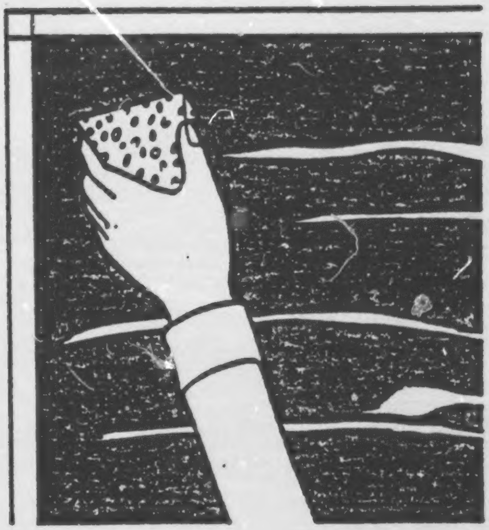
7. WASH THE CHALK TRAY WITH A DAMP SPONGE.



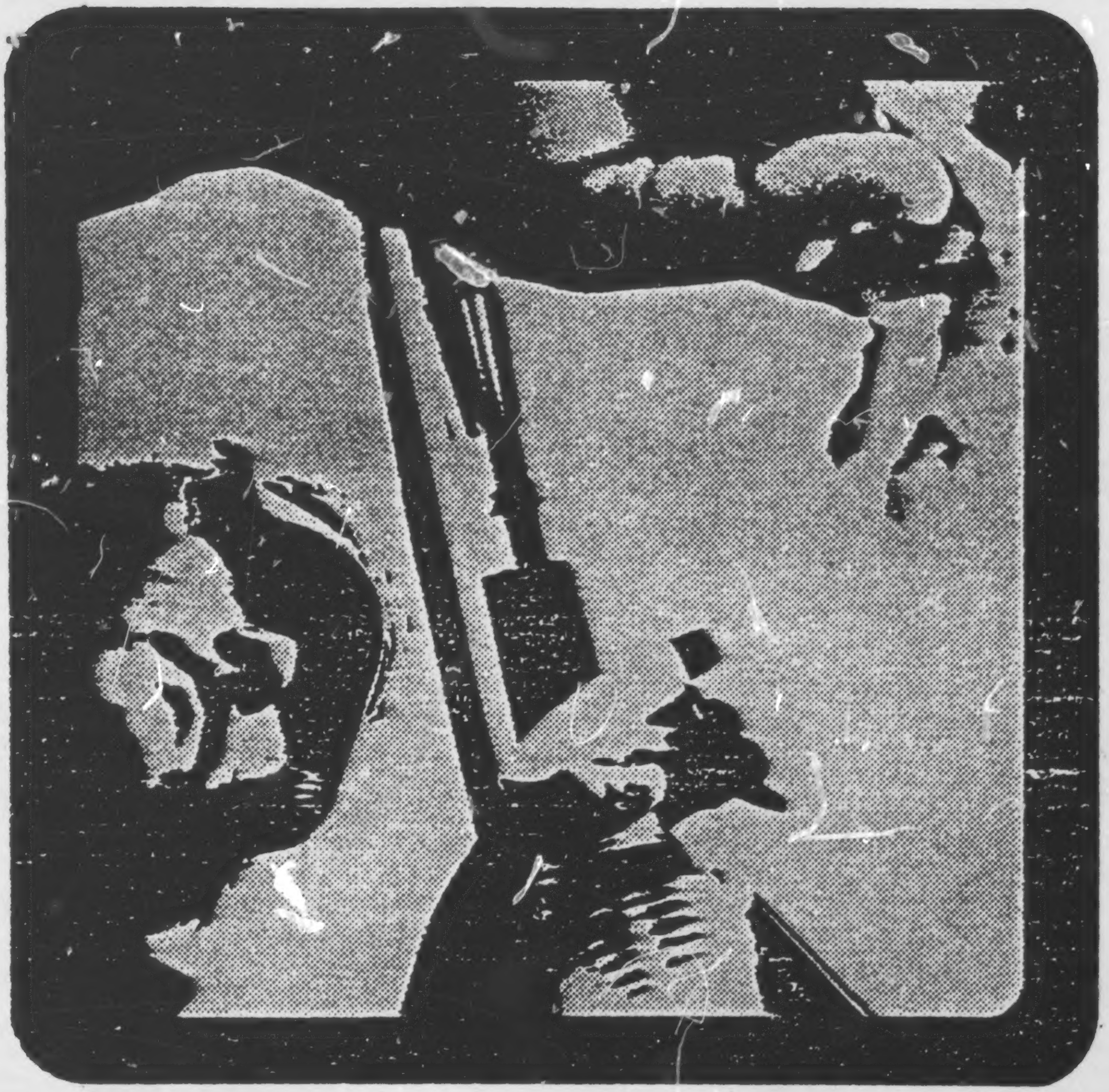
8. AFTER THE CHALKBOARD DRIES, CHECK IT TO SEE THAT NO STREAKS ARE ON THE BOARD.

JOB STEPS

9. GO OVER THE STREAKS IN A STRAIGHT MOTION. USE A CLEAN DAMP SPONGE.



10. RETURN ALL EQUIPMENT. BE SURE ALL EQUIPMENT IS CLEANED.



building maintenance & engineering

unit: CARPET CARE

capital area career center

module: 2201 05 001 3 **date:** 12-6-76 **level:** 2

skill title: SHAMPOOING CARPETS (DRY FOAM)

developed & written by: DWIGHT SMITH

visuals by: SANDRA STARNAMAN

WORD GUIDE

DRY FOAM - CARPET CLEANER THAT DOES NOT SOAK THE CARPET.

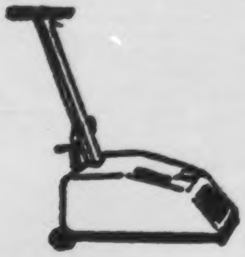
PILE - THE YARNS OF A CARPET.

PERFORMANCE OBJECTIVE

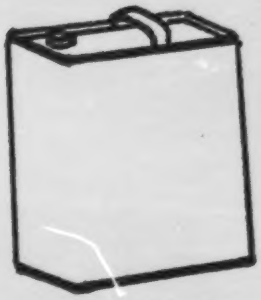
YOU ARE GOING TO LEARN:

HOW TO SHAMPOO A CARPET USING A DRY FOAM MACHINE.

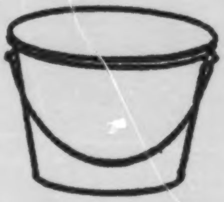
AND IN ORDER TO DO THIS YOU WILL NEED:



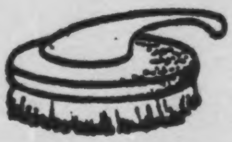
DRY FOAM SHAMPOO MACHINE



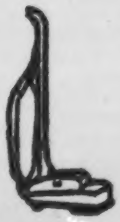
DRY FOAM SHAMPOO



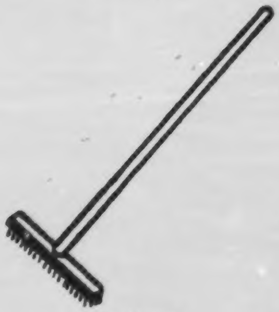
PAIL



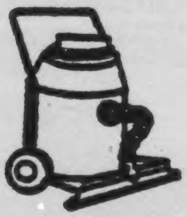
SHORT BRISTLED BRUSH



UPRIGHT VACUUM CLEANER



CARPET BRUSH



WET VACUUM

PENCIL AND PAPER

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE SHAMPOOED A CARPET AND THE PILE ALL STANDS UP THE SAME WAY.

CHECK YOURSELF:

THE PILE OF A CARPET IS ________________.

A. A HEAP OF DIRT ON THE CARPET.
B. YARNS THAT MAKE UP A CARPET.
C. THE BACKING OF A CARPET.
D. THE COLOR OF A CARPET.

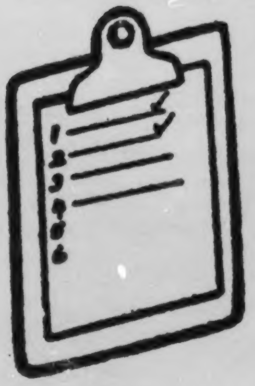
HOPE YOU PICKED "B".

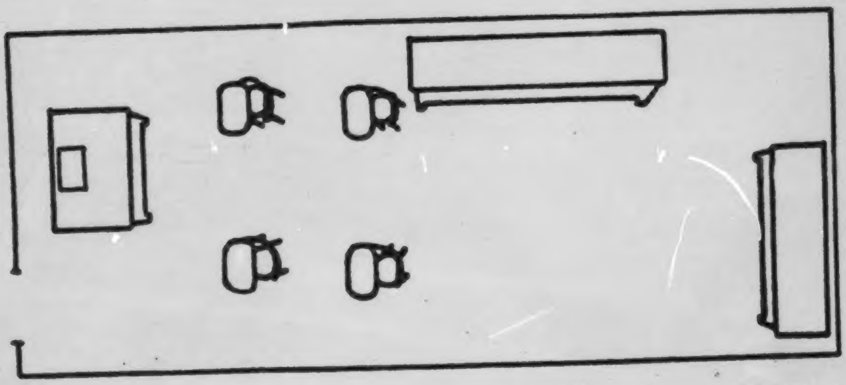
INFORMATION	MATERIALS	LOCATION OF MATERIALS
WHY DO YOU SHAMPOO A CARPET?		
BECAUSE DIRT GETS GROUND INTO THE PILE OF A CARPET. VACUUMING DOES NOT GET THE DIRT OUT. DRY FOAM CAN GET MOST OF THE DIRT OUT.		
GET AN EQUIPMENT CHECKLIST FOR THE CARPET CARE UNIT.	EQUIPMENT CHECKLIST	

JOB STEPS

1. GET ALL THE EQUIPMENT LISTED ON YOUR EQUIPMENT CHECKLIST.

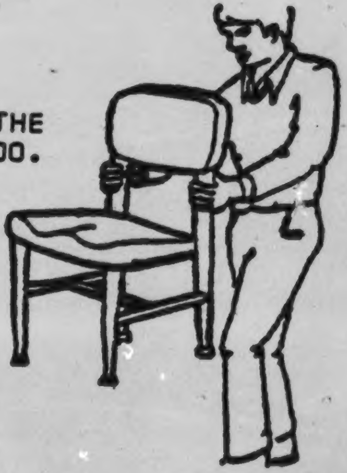
   BRING THE EQUIPMENT TO THE AREA YOU WILL CLEAN. YOUR INSTRUCTOR WILL TELL YOU WHERE.





2. MAKE A MAP OF ALL THE FURNITURE IN THE ROOM.

3. MOVE THE FURNITURE OUT OF THE CARPET AREA YOU WILL SHAMPOO.

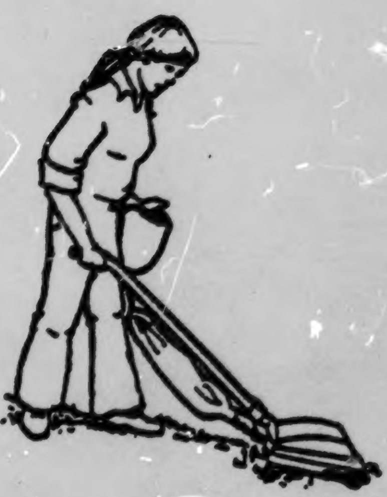


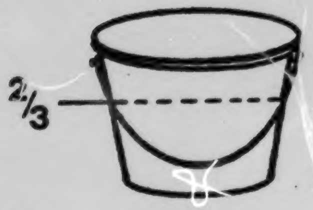
SAFETY FIRST

LIFT CAREFULLY, WITH YOUR LEGS ONLY, NEVER YOUR BACK.
GET HELP FOR HEAVY THINGS.

JOB STEPS

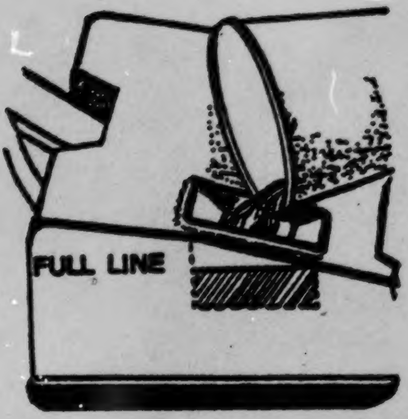
4. VACUUM THE AREA TO BE SHAMPOOED.

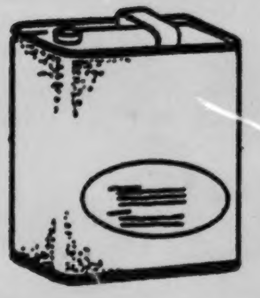




5. FILL THE PAIL 2/3 FULL WITH WARM WATER.

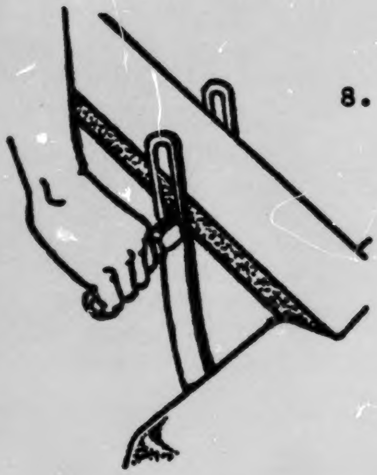
6. POUR THE WATER INTO THE DRY FOAM SHAMPOO MACHINE. FILL THE MACHINE UP TO THE "FILL LINE".



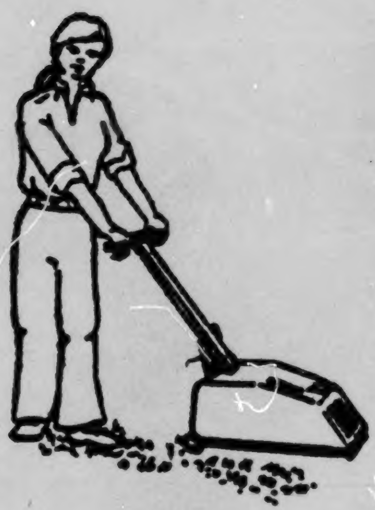


7. ADD SHAMPOO ACCORDING TO THE INSTRUCTIONS ON THE PACKAGE.

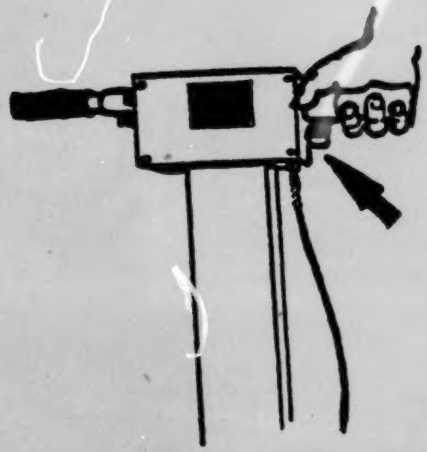
JOB STEPS



8. ADJUST BRUSH HEIGHT ACCORDING TO DIRECTIONS FROM YOUR INSTRUCTOR.

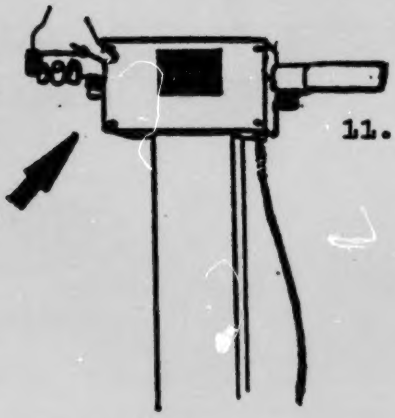


9. PLUG THE MACHINE IN AND PUT IT ALONG THE WALL.

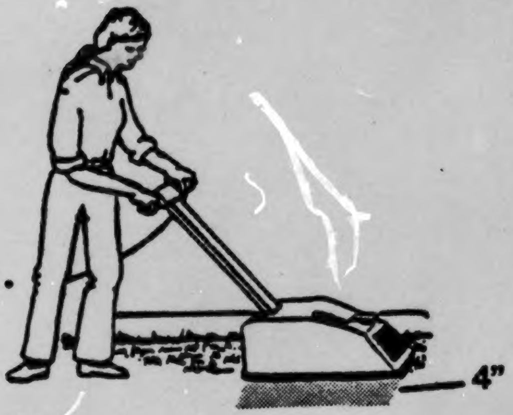


10. PUSH THE "FORWARD AND FOAM" BUTTON. WHEN FOAM STARTS, GUIDE THE MACHINE ALONG THE WALL TO THE END.

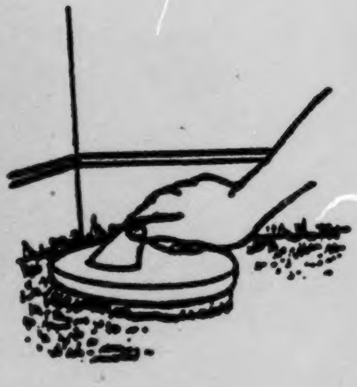
JOB STEPS



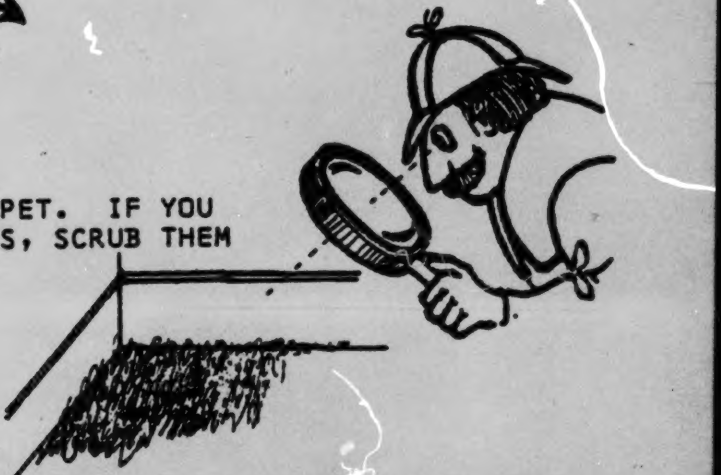
11. PUSH THE REVERSE BUTTON. GUIDE THE MACHINE BACK ALONG THE SAME PATH TO WHERE YOU STARTED.



12. MOVE THE MACHINE OVER 4 INCHES. REPEAT JOB STEPS 10 AND 11.



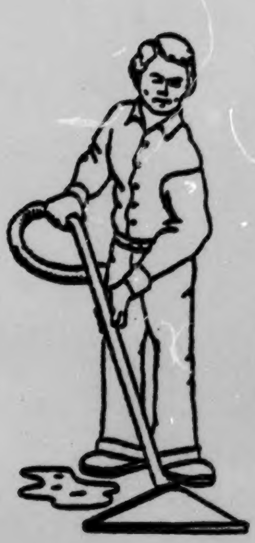
13. WHEN YOU HAVE SHAMPOOED ALL THE CARPET, USE THE SHORT BRISTLED BRUSH TO SCRUB THE CORNERS.

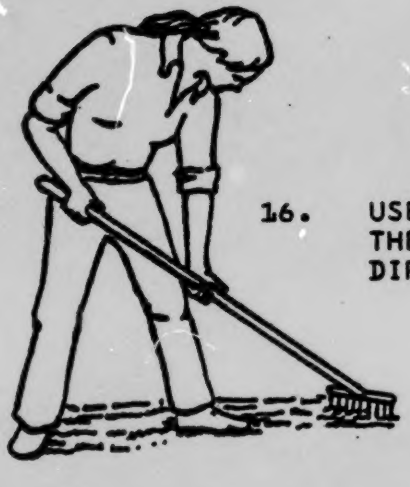


14. INSPECT THE CARPET. IF YOU MISSED ANY SPOTS, SCRUB THEM WITH THE BRUSH.

JOB STEPS

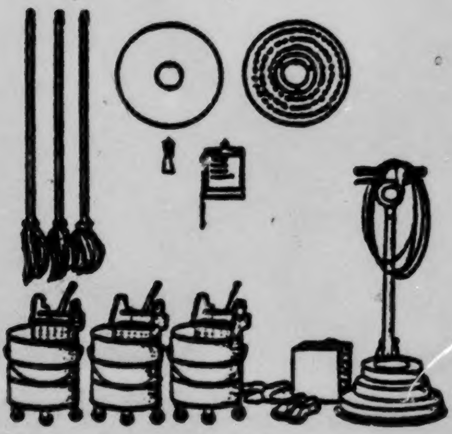
15. WET VACUUM THE CARPET.



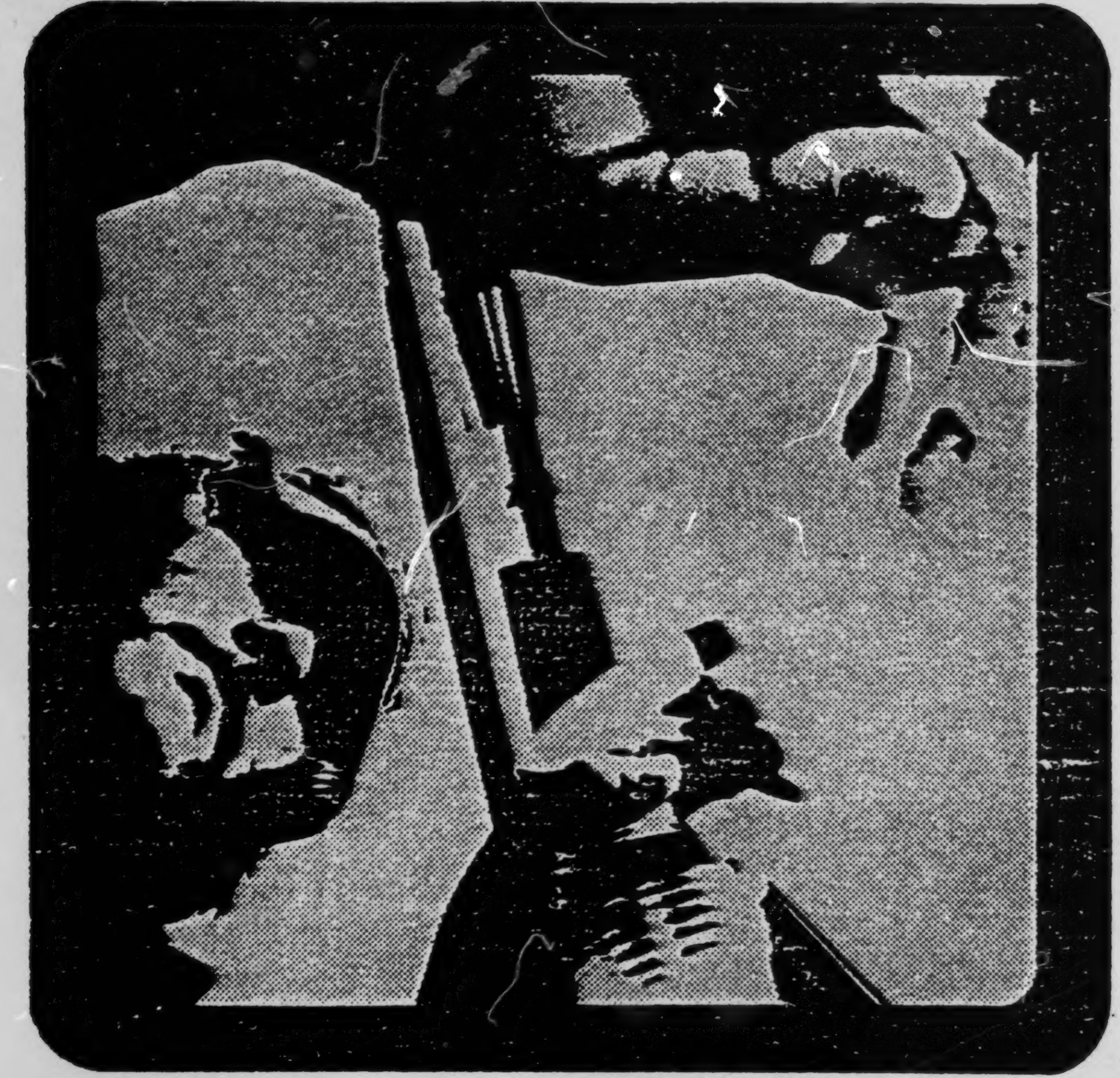


16. USE THE CARPET BRUSH TO RAKE THE PILE ALL IN THE SAME DIRECTION.

17. RETURN THE EQUIPMENT AND CLEAN IT.



A JOB WELL DONE!



building maintenance & engineering

unit: CARPET CARE

capital area career center

module: 2201 05 002 3 date: 12-6-76 level: 2

skill title: SHAMPOOING CARPET WITH ROTARY MACHINE

developed & written by: DWIGHT SMITH

visuals by:

WORD GUIDE

ROTARY SHAMPOO TANK - HOLDS SHAMPOO FOR CARPET CLEANING.

PILE - THE YARNS OF THE CARPET.

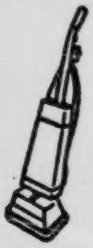
ROTARY MACHINE - USES A SPINNING BRUSH LIKE A FLOOR SCRUBBER.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO SHAMPOO A CARPET WITH A ROTARY MACHINE.

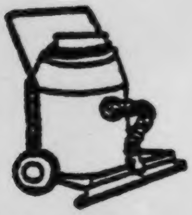
AND IN ORDER TO DO THIS YOU WILL NEED:



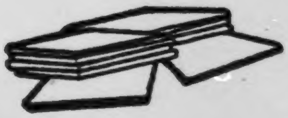
ROTARY CARPET SHAMPOO MACHINE

SHAMPOO

CARPET SPOT CLEANER

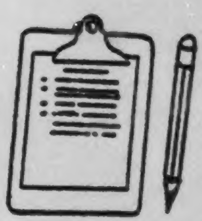


WET VACUUM



10-2" X 2" PLASTIC OR CARDBOARD SQUARES

UPRIGHT VACUUM CLEANER



PENCIL AND PAPER

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE CLEANED A CARPET AND THE PILE STANDS UP THE SAME WAY.

INFORMATION

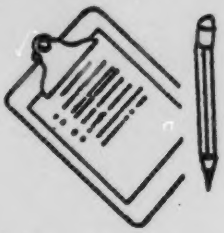
WHY DO YOU USE A ROTARY MACHINE TO CLEAN A CARPET?

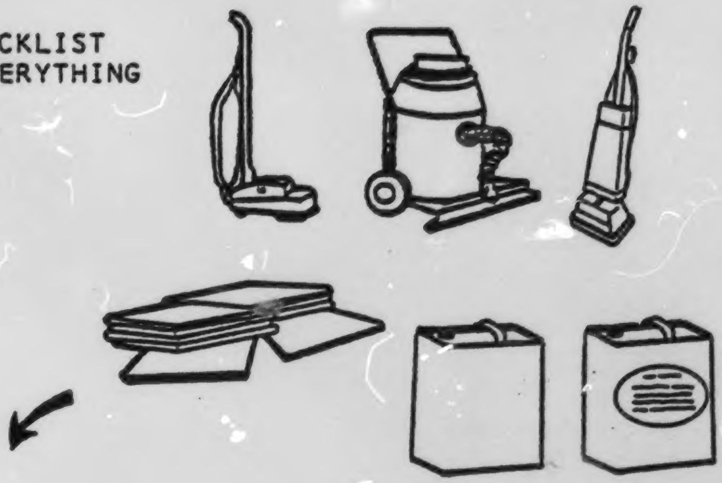
BECAUSE IT GETS THE SHAMPOO DOWN IN THE CARPET TO LOOSEN THE DIRT. THEN YOU CAN WET VACUUM THE CARPET AND PICK UP THE DIRT.

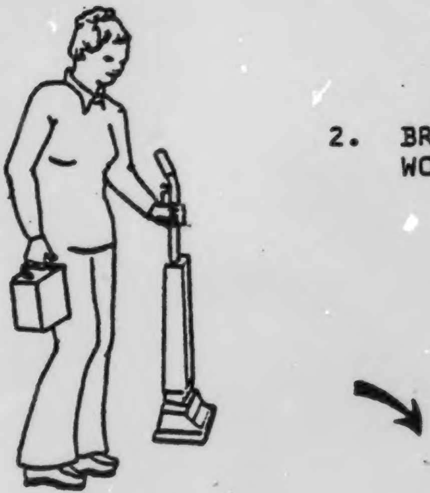
MAKE SURE YOU HAVE AN EQUIPMENT CHECKLIST FOR THE CARPET CARE UNIT.

JOB STEPS

1. USE YOUR EQUIPMENT CHECKLIST TO BE SURE YOU HAVE EVERYTHING YOU WILL NEED.

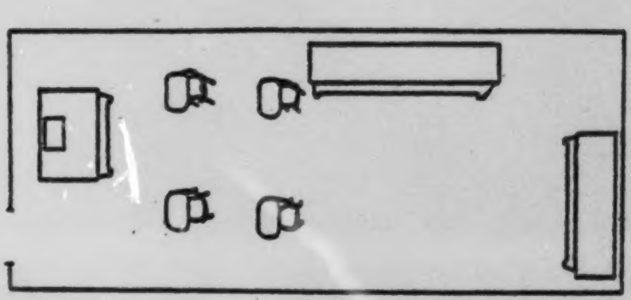






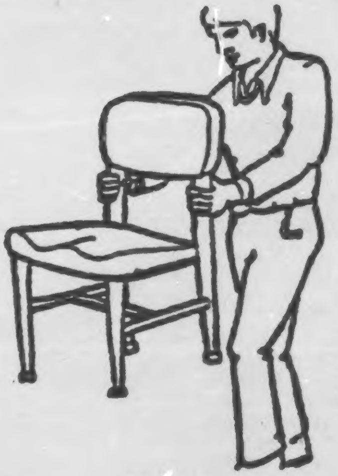
2. BRING THE EQUIPMENT TO YOUR WORK AREA.

3. MAKE A MAP OF THE FURNITURE IN THE ROOM.



JOB STEPS

4. MOVE ALL THE FURNITURE OUT OF THE ROOM. GET HELP WITH ANYTHING HEAVY.



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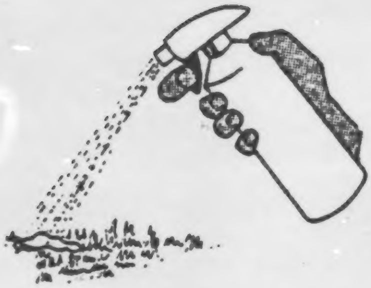
SAFETY FIRST

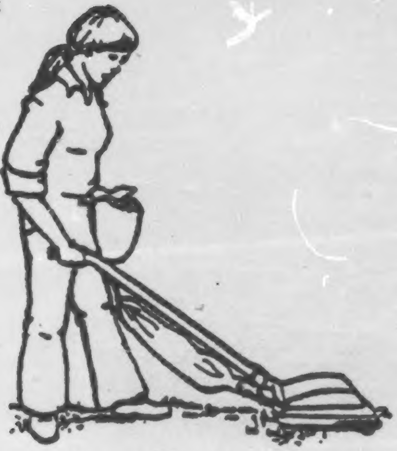
LIFT WITH YOUR LEGS. DO NOT LIFT WITH YOUR BACK. GET HELP WITH HEAVY THINGS.

****



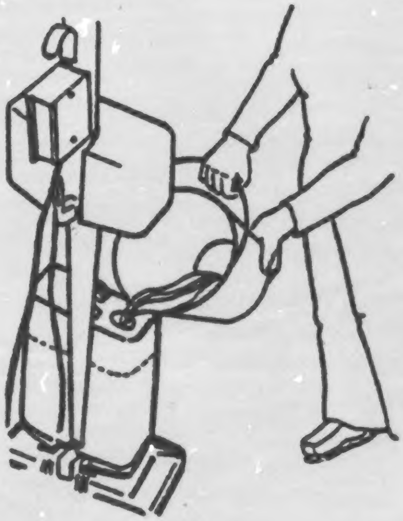
5. USE THE SPOT CLEANER ON STAINS AND SPOTS (SEE MODULE 2201 05 4 3).

6. VACUUM THE CARPET. (SEE MODULE 2201 05 4 3).



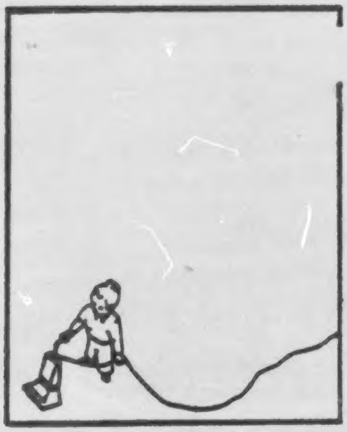
JOB STEPS

7. FILL THE ROTARY SHAMPOO TANK 3/4 FULL WITH WARM WATER.



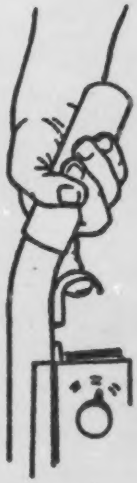
8. ADD THE SHAMPOO ACCORDING TO DIRECTIONS ON THE LABEL.

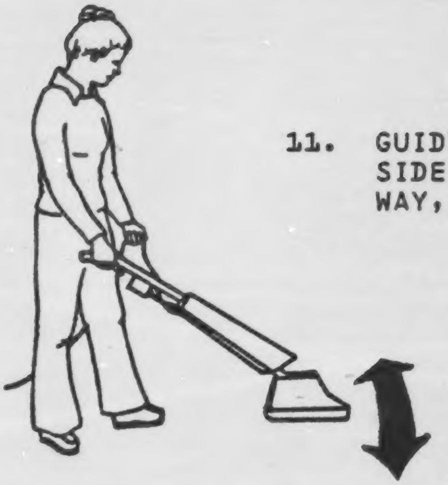
9. MOVE THE MACHINE ON ITS WHEELS TO THE PLACE FARTHEST AWAY FROM YOUR EXIT. PLUG THE MACHINE IN.



JOB STEPS

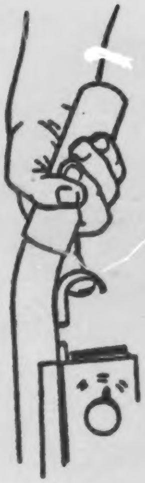
0. PULL UP AND QUICKLY LET GO OF THE SHAMPOO RELEASE HANDLE. TURN ON THE MACHINE. FOAM WILL START.





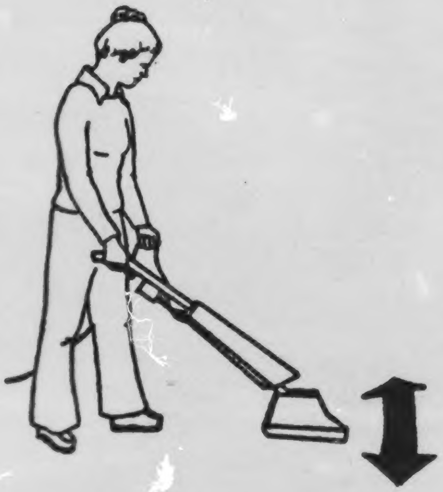
11. GUIDE THE MACHINE FROM SIDE TO SIDE. LIFT UP HANDLE TO GO ONE WAY, PULL DOWN TO GO THE OTHER WAY.

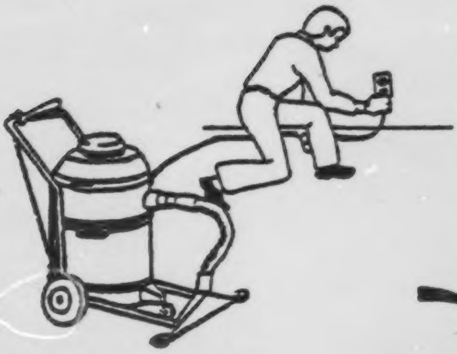
12. PULL UP AND LET GO OF THE SHAMPOO RELEASE HANDLE WHEN YOU NEED MORE FOAM. DO NOT MAKE THE FLOOR TOO WET.



JOB STEPS

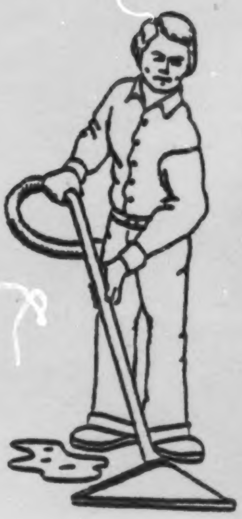
13. DO JOB STEPS 11 AND 12 UNTIL YOU HAVE SHAMPOOED THE WHOLE CARPET.





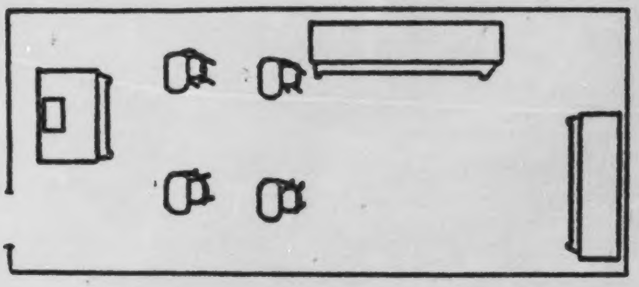
14. TAKE THE ROTARY MACHINE OUT OF THE ROOM. BRING IN THE WET VACUUM. PLUG IT IN.

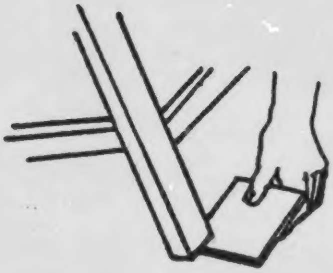
15. WET VACUUM THE ENTIRE CARPET. MOVE THE PICK-UP IN THE SAME WAY OVER THE CARPET.



JOB STEPS

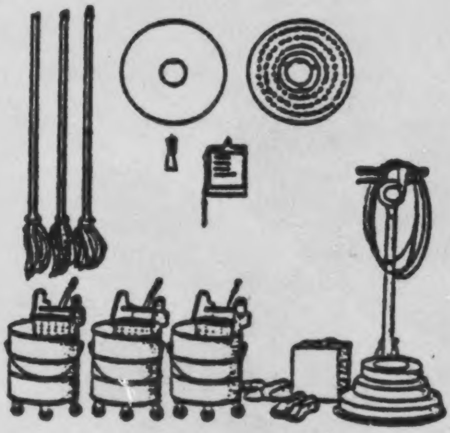
16. MOVE THE FURNITURE BACK TO ITS PLACE. USE YOUR MAP TO BE SURE TO GET IT BACK WHERE IT CAME FROM.





17. PUT CARDBOARD OR PLASTIC SQUARES UNDER EACH LEG. THIS STOPS RUST STAINS.

18. RETURN EQUIPMENT AND CLEAN IT.



JOB STEPS

19. ASK YOUR INSTRUCTOR TO INSPECT
    YOUR WORK.

GOOD WORK! YOU JUST LEARNED HOW TO
SHAMPOO A CARPET WITH A ROTARY MACHINE.

building maintenance & engineering

unit: CARPET CARE

capital area career center

module: 2201 05 003 3 date: 12-6-76 level:

skill title: VACUUMING A CARPET

developed & written by: DWIGHT SMITH

visuals by: SANDRA STARNAMAN

WORD GUIDE

PILE - YARNS THAT MAKE UP A CARPET.

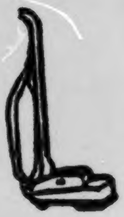
CARPET RAKE - A BRUSH TO RAISE THE PILE OF A CARPET.

PERFORMANCE OBJECTIVE

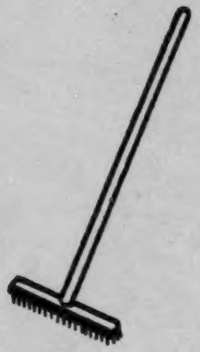
YOU ARE GOING TO LEARN:

HOW TO VACUUM A CARPET.

AND IN ORDER TO DO THIS YOU WILL NEED:



UPRIGHT VACUUM CLEANER



CARPET RAKE

WE WILL KNOW YOU CAN DO IT WHEN:

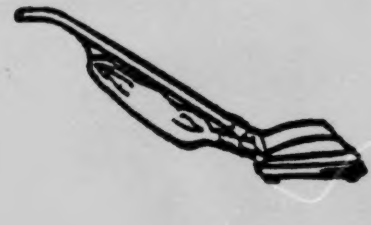
YOU HAVE VACUUMED A CARPET SO THAT NO DIRT CAN BE SEEN AND THE PILE IS GOING THE SAME WAY.

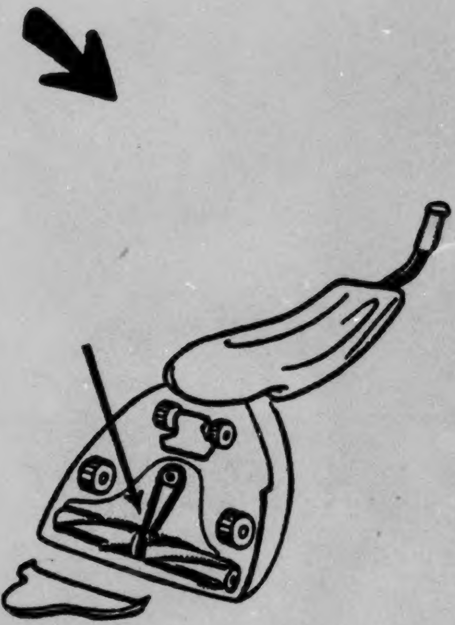
INFORMATION

WHY DO YOU VACUUM A CARPET?

TO REMOVE DIRT THAT LOOKS BAD AND WEARS OUT CARPETS FAST.

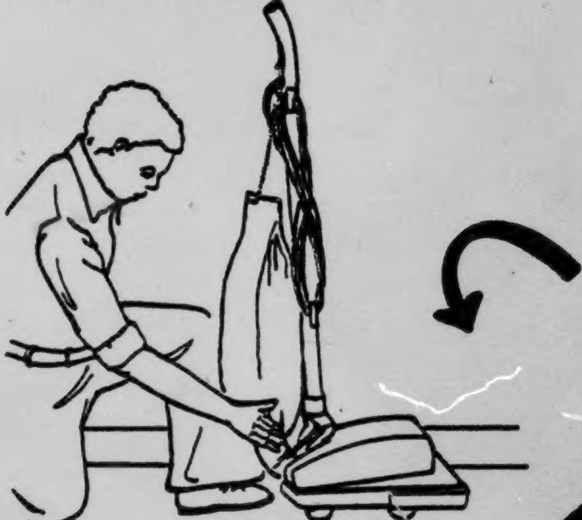
1. GET AN UPRIGHT VACUUM CLEANER.



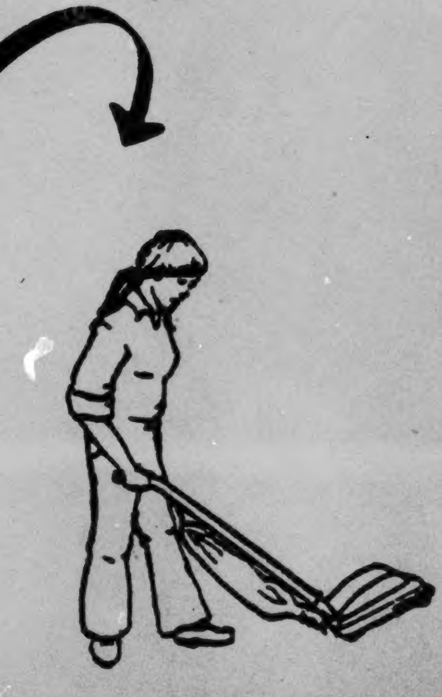


2. CHECK THE MACHINE:

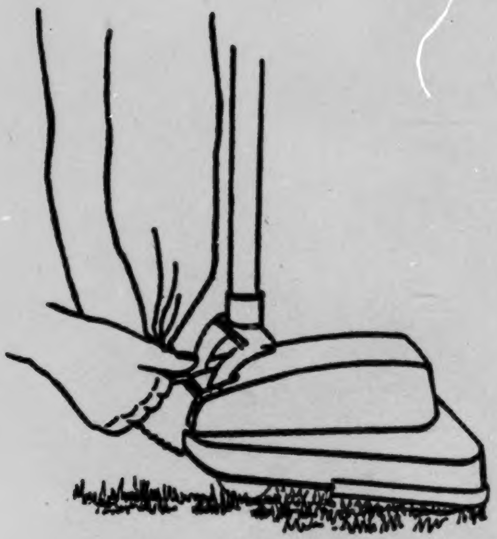
   1. BELT MUST BE ON.
   2. ELECTRIC CORD MUST NOT HAVE CRACKS OR BARE WIRES.
   3. DIRT BAG MUST NOT BE FULL. CHECK BY SQUEEZING BAG.



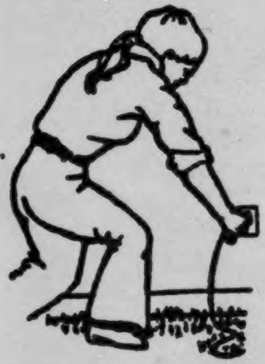
3. GO TO WHERE YOUR INSTRUCTOR TELLS YOU TO VACUUM.



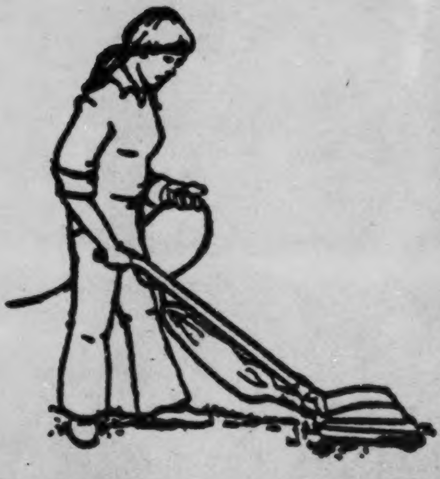
4. ADJUST THE BRUSH HEIGHT. ASK YOUR INSTRUCTOR TO HELP.



5. PLUG THE MACHINE IN AND TURN IT ON.

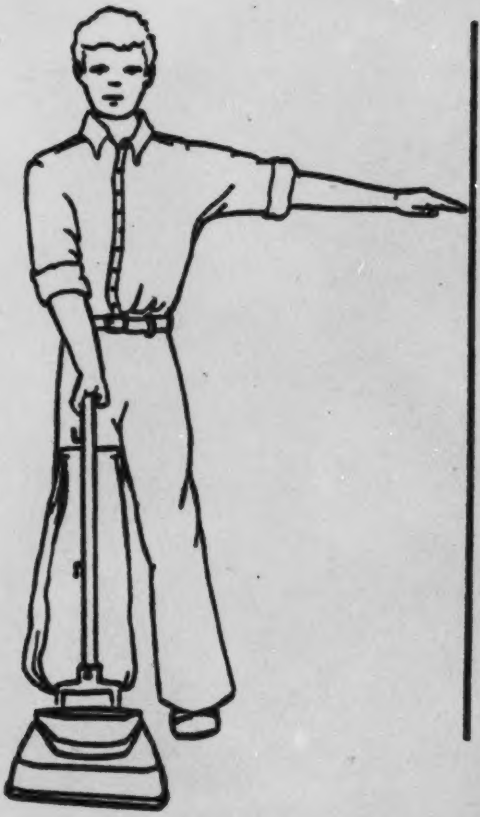


6. START AT ONE CORNER OF THE ROOM. HOLD THE CORD IN ONE HAND AND THE MACHINE IN THE OTHER.

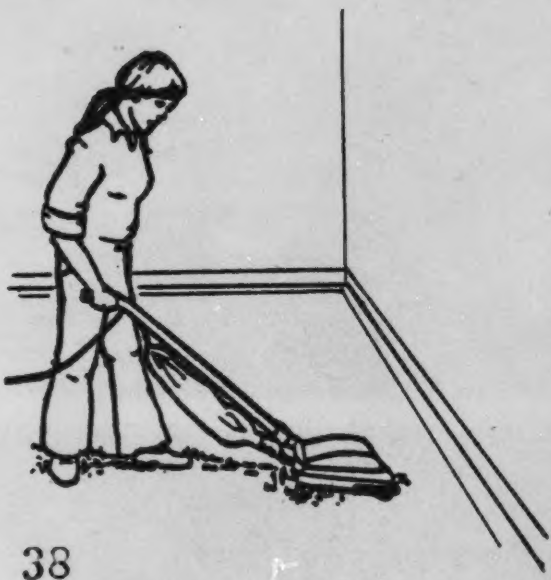


JOB STEPS

7. STAND ONE ARM'S LENGTH FROM THE WALL.



8. PUSH THE VACUUM CLEANER TO THE WALL AND PULL IT BACK.

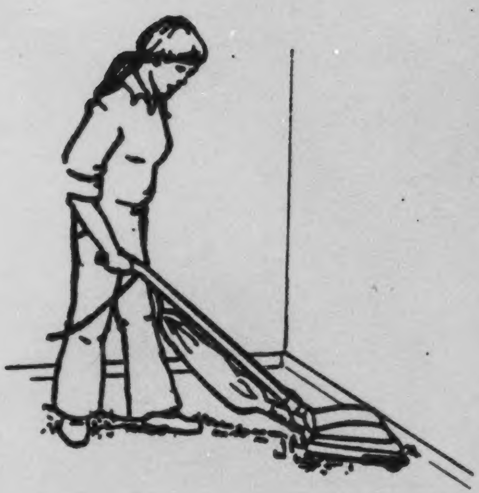


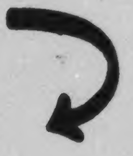
JOB STEPS

WORD GUIDE

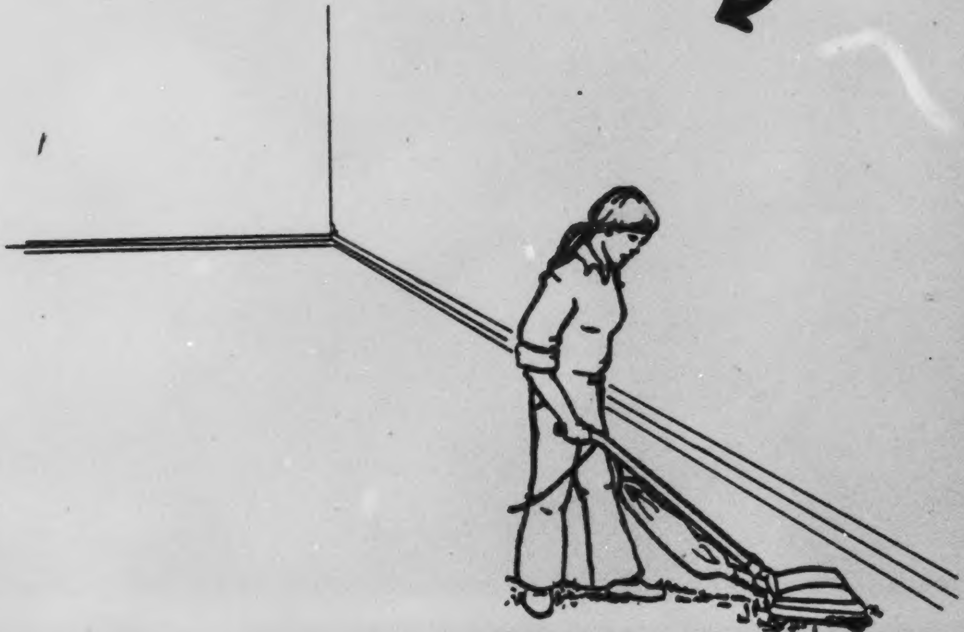
OVERLAP - GO OVER PART OF AN AREA ALREADY CLEANED.

9. PUSH IT TOWARDS THE WALL AT A LITTLE ANGLE. PULL IT BACK ACROSS CARPET YOU HAVE NOT CLEANED YET. BE SURE TO OVERLAP.

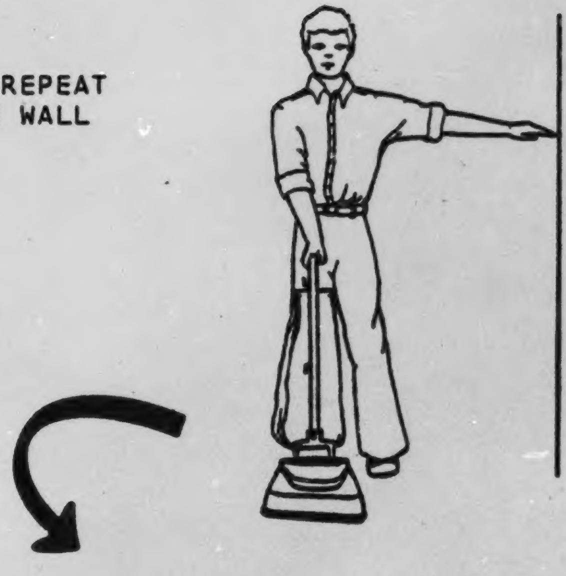




10. GO UNTIL YOU GET TO THE OTHER WALL.

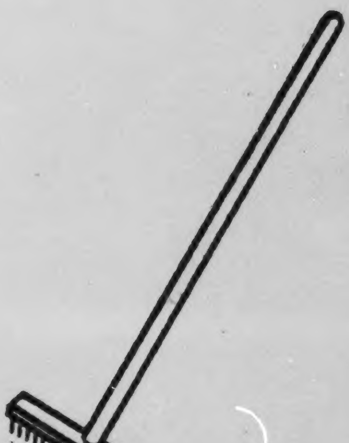


11. STEP BACK ONE ARM'S LENGTH AND REPEAT JOB STEP 9 UNTIL YOU GET TO THE WALL YOU STARTED AT.

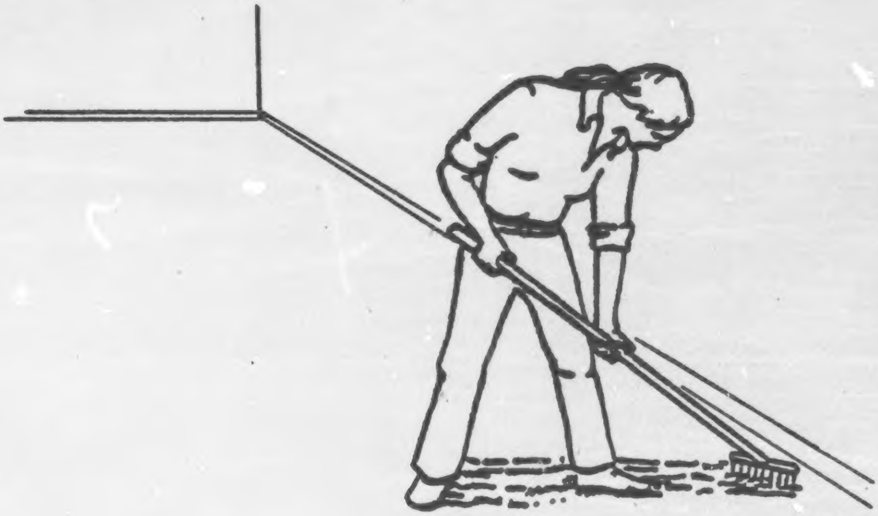


12. REPEAT JOB STEPS 9, 10, AND 11 UNTIL YOU ARE DONE WITH THE ROOM. CHECK FOR ANY DIRT YOU MIGHT HAVE MISSED.

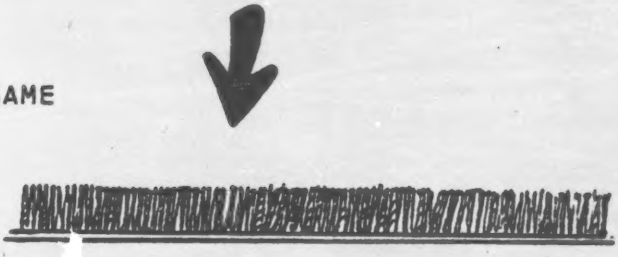
13. IF THE CARPET IS SHAG OR HIGH PILE, GET A CARPET RAKE.



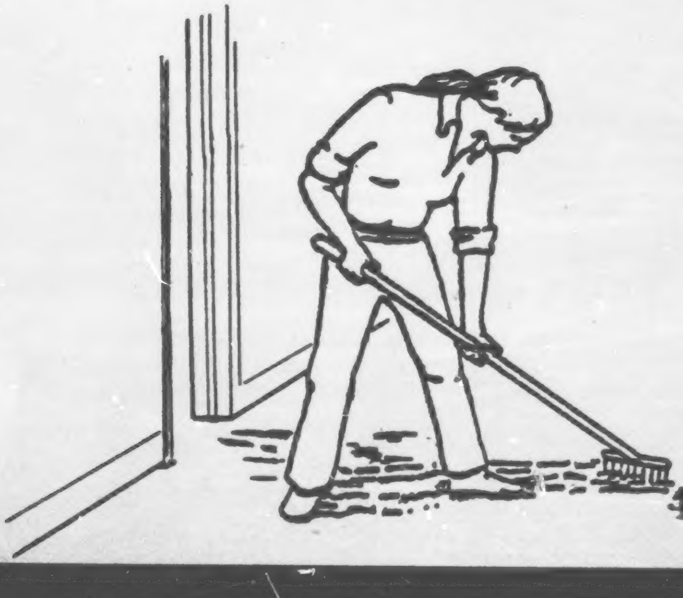
14. START AT THE FAR CORNER OF THE ROOM.



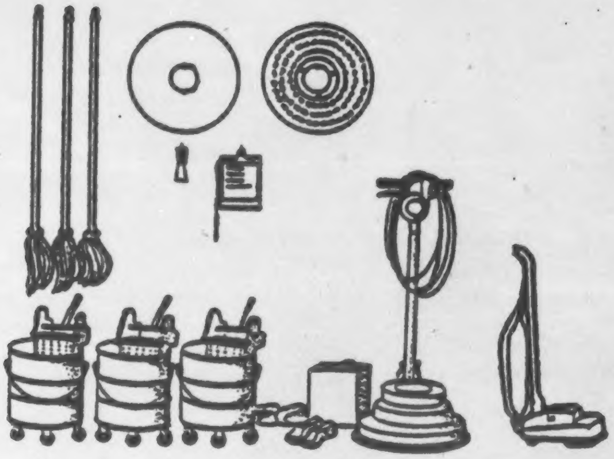
15. RAKE THE CARPET PILE ALL THE SAME DIRECTION SO IT STANDS UP.



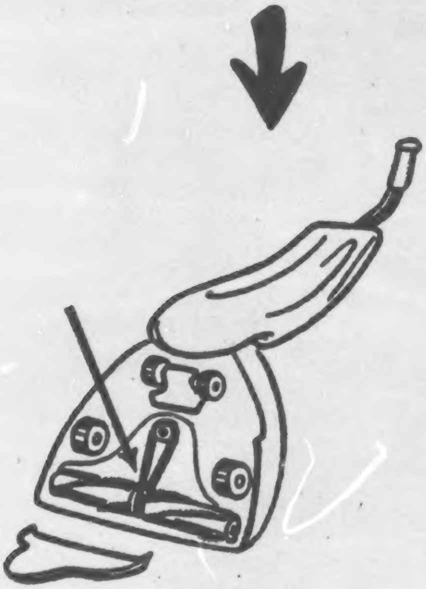
16. RAKE OVER YOUR FOOT PRINTS WHEN YOU LEAVE.

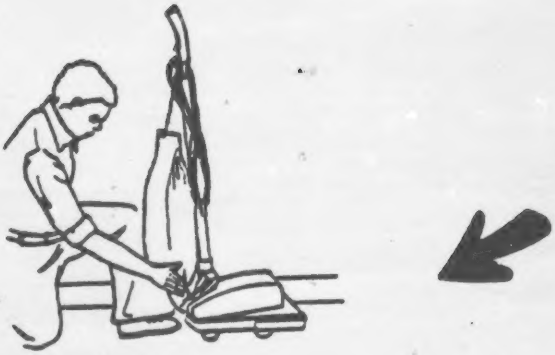


17. RETURN THE EQUIPMENT TO THE STORAGE AREA.



18. CHECK MACHINE LIKE YOU DID IN JOB STEP 2.





building maintenance & engineering

unit: CARPET CARE

capital area career center

module: 2201 05 004 3 **date:** 12-07-76 **level:** 2

skill title: SPOT CLEANING A CARPET

developed & written by: DWIGHT SMITH

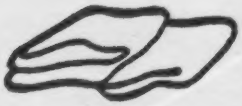
visuals by: SANDRA STARNAMAN

PERFORMANCE OBJECTIVE

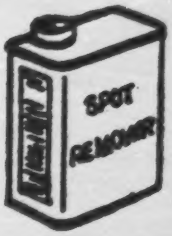
YOU ARE GOING TO LEARN:

HOW TO SPOT CLEAN A CARPET.

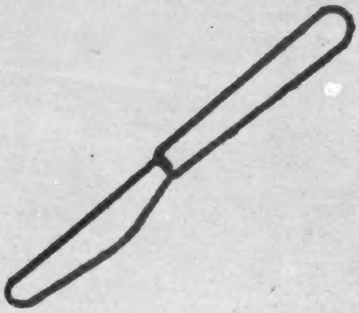
AND IN ORDER TO DO THIS YOU WILL NEED:



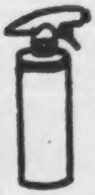
SOFT CLEAN CLOTH



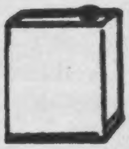
STAIN REMOVER



DULL KNIFE



GUM REMOVER



DRY CLEANING STAIN REMOVER

WE WILL KNOW YOU CAN DO IT WHEN:

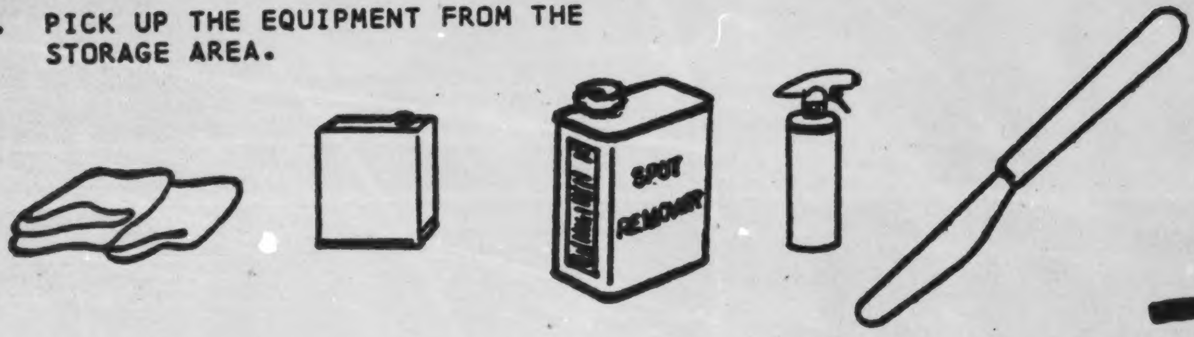
YOU HAVE REMOVED STAIN OR GUM FROM A CARPET WITHOUT DAMAGING THE CARPET.

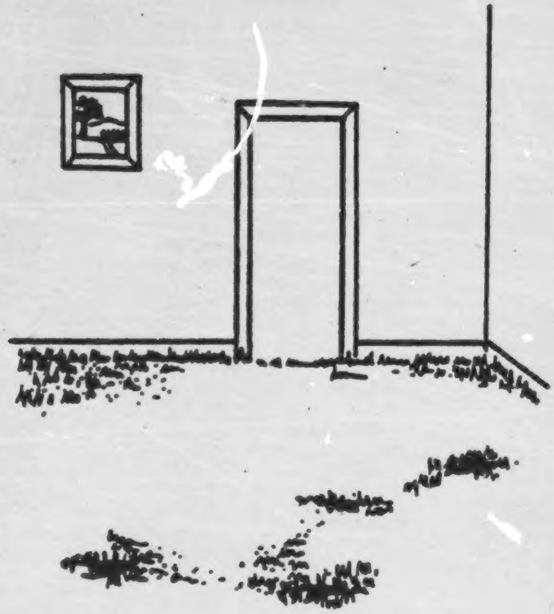
INFORMATION

WHY DO WE SPOT CLEAN A CARPET?

TO GET OUT STAINS THAT WILL NOT COME OUT WHEN YOU SHAMPOO.

1. PICK UP THE EQUIPMENT FROM THE STORAGE AREA.

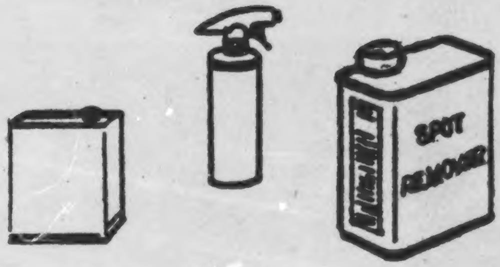

SPOT REMOVER



2. GO TO WHERE YOU WILL SPOT CLEAN.

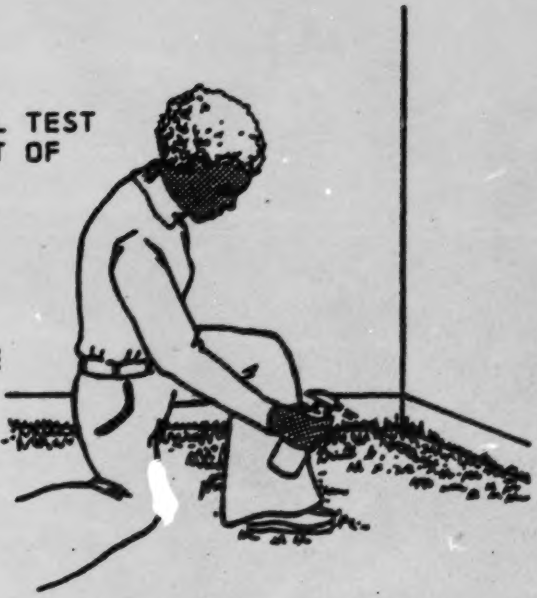
3. FIND OUT WHAT KIND OF STAIN YOU NEED TO CLEAN. IF YOU CAN NOT TELL, ASK YOUR INSTRUCTOR.

4. SELECT THE RIGHT KIND OF CLEANER FOR THE STAIN.

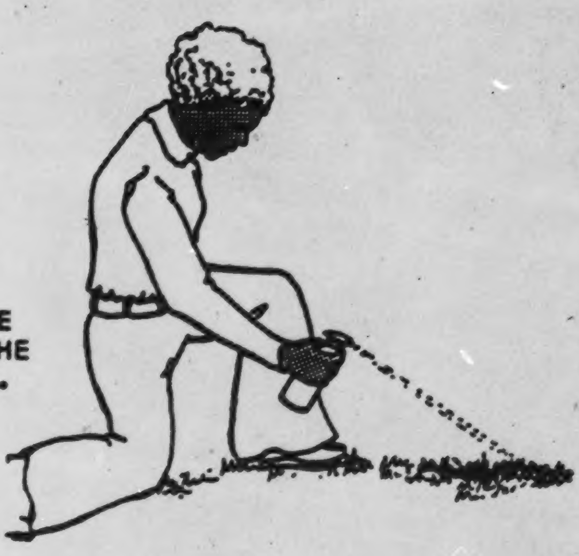

SPOT REMOVER

5. TRY OUT THE CLEANER ON A SMALL TEST AREA. FIND A SPOT THAT IS OUT OF THE WAY.

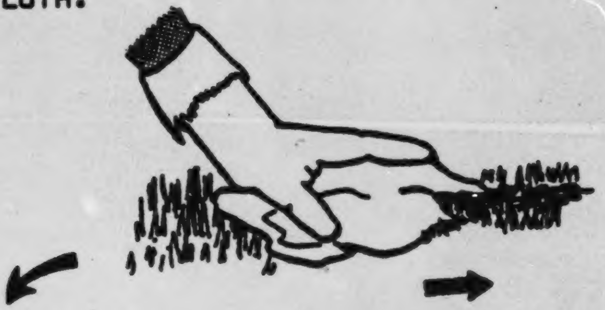
6. SPRAY THE AREA VERY LIGHTLY. WIPE UP THE CLEANER WITH THE CLOTH.

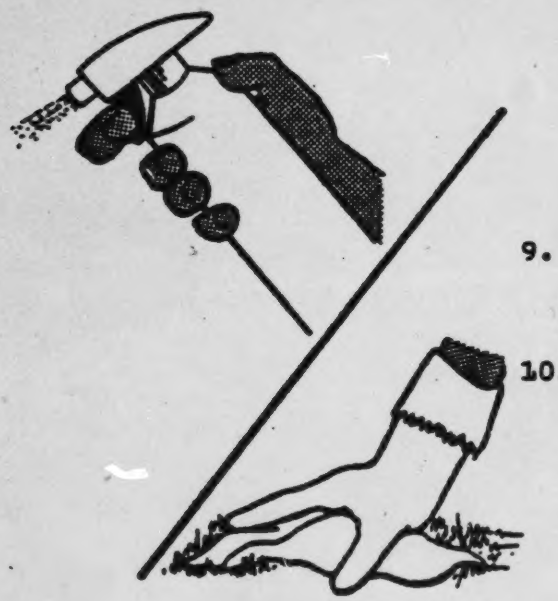


7. IF THE CLEANER DID NOT HURT THE CARPET, APPLY THE CLEANER TO THE STAIN. DO NOT SOAK THE CARPET.



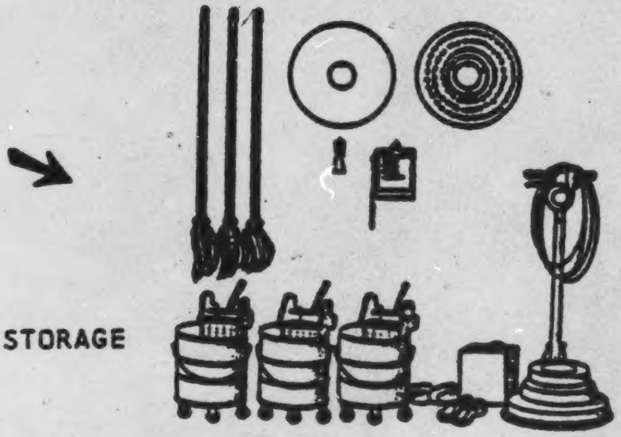
8. WIPE TOWARDS THE CENTER OF THE STAIN WITH THE CLOTH.





9. REPEAT JOB STEPS 7 AND 8 UNTIL THE STAIN IS GONE.

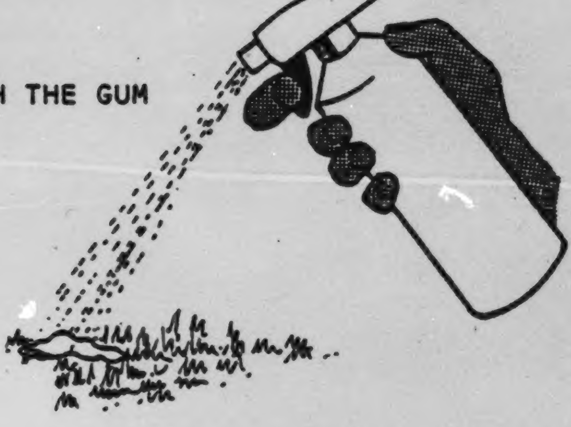
10. DO THE ABOVE STEPS FOR EVERY STAIN ON THE CARPET.

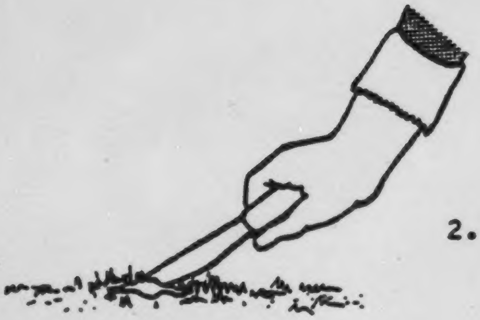


11. RETURN THE EQUIPMENT TO THE STORAGE AREA.

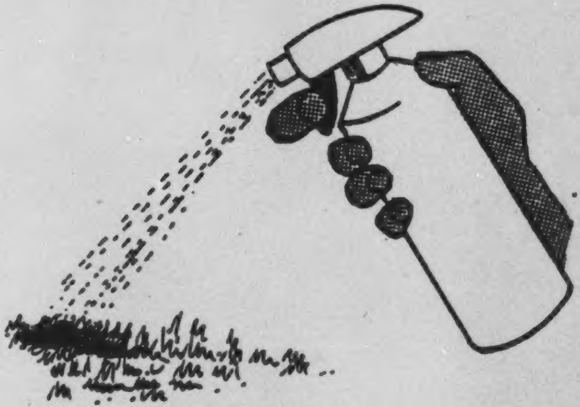
REMOVING GUM

1. SPRAY THE GUM WITH THE GUM REMOVER

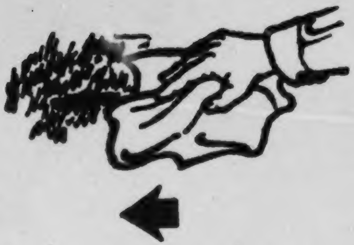




2. SCRAPE THE GUM WITH THE DULL KNIFE.

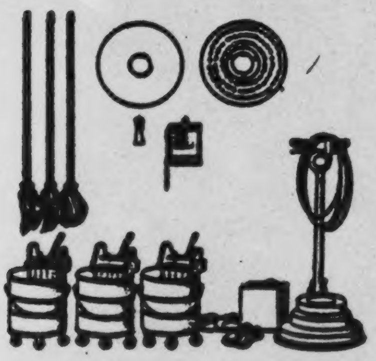


3. APPLY THE DRY CLEANING STAIN REMOVER TO THE STAIN.



4. WIPE TOWARDS THE CENTER OF THE STAIN.

5. RETURN THE EQUIPMENT TO THE STORAGE AREA.



building maintenance & engineering

unit: CARPET CARE

capital area career center

module: 2201 05 005 3 date: 12-6-76 level: 2

skill title: CARPET CLEANING WITH CARPET SHEEN

developed & written by: DWIGHT SMITH

visuals by: BILL DRAPER

WORD GUIDE

CARPET SHEEN - A KIND OF CARPET CLEANER

ROTARY FLOOR MACHINE - BUFFING MACHINE

PRESSURE SPRAYER - MACHINE TO SPRAY CARPET CLEANER

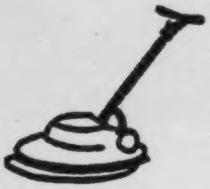
SPECIAL DRIVE BLOCK - USED ON THE FLOOR MACHINE WHEN DOING CARPETS

PERFORMANCE OBJECTIVE

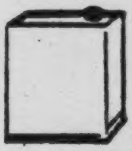
YOU ARE GOING TO LEARN:

HOW TO CLEAN A CARPET WITH CARPET SHEEN.

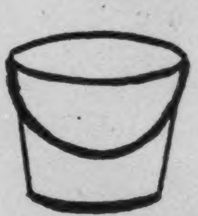
AND IN ORDER TO DO THIS YOU WILL NEED:



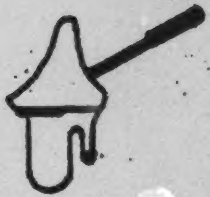
ROTARY FLOOR MACHINE



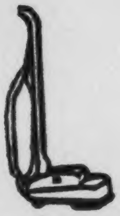
CARPET SHEEN



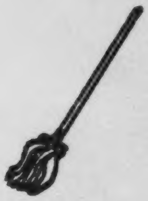
PAIL



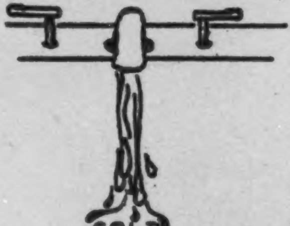
WRINGER



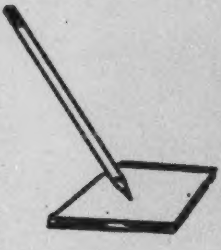
UPRIGHT VACUUM CLEANER



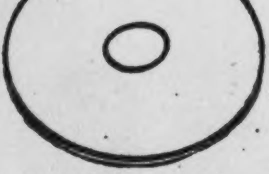
SMALL MOP



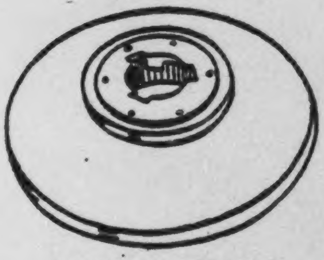
COLD WATER



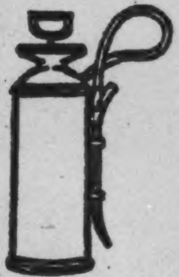
PENCIL AND PAPER



CARPET PAD



SPECIAL DRIVE BLOCK



2 1/2 GALLON PRESSURE SPRAYER

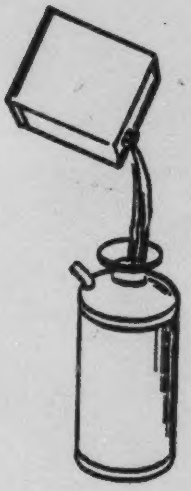
WE WILL KNOW YOU CAN DO IT WHEN:

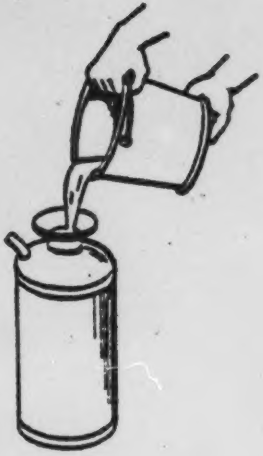
NO SPOTS CAN BE SEEN AND THE COLORS ARE BRIGHT ON THE CARPET YOU HAVE CLEANED.

JOB STEPS

1. VACUUM THE CARPET. THEN BRING ALL EQUIPMENT TO THE AREA.

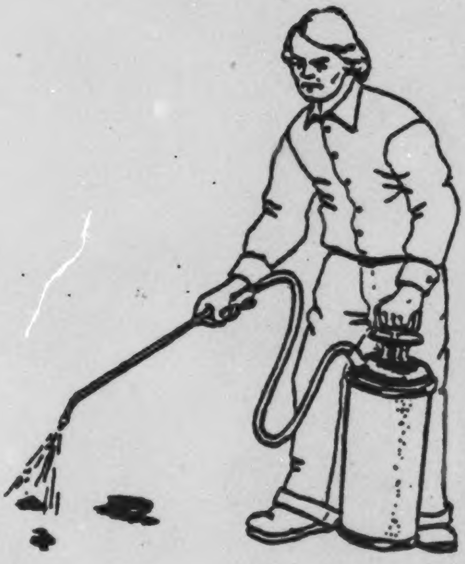
2. FILL THE TANK OF THE PRESSURE SPRAYER 1/4 FULL WITH CARPET SHEEN.

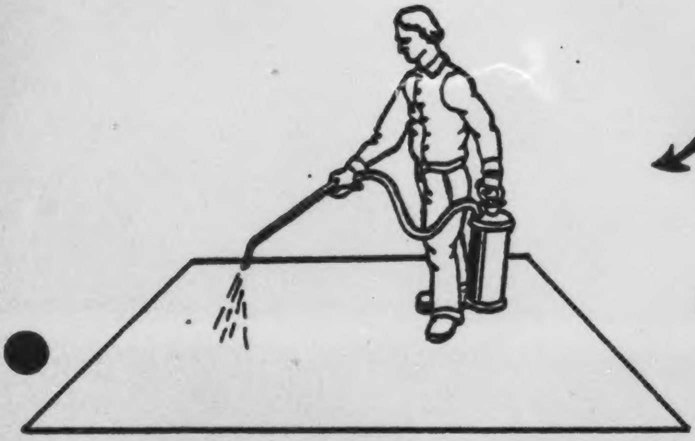




3. FILL THE TANK UP WITH COLD WATER. SHAKE WELL.

4. TURN ON THE PRESSURE SPRAYER AND HOLD THE NOZZLE 12 INCHES FROM THE CARPET (AN INCH ABOVE HEAVY STAINS).

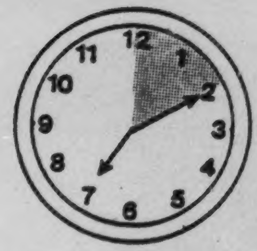


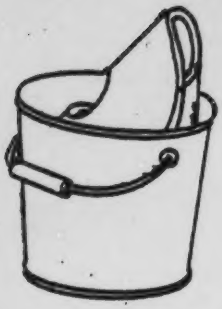


5. SPRAY A 12 FOOT BY 12 FOOT AREA. DO NOT WET THE CARPET.

JOB STEPS

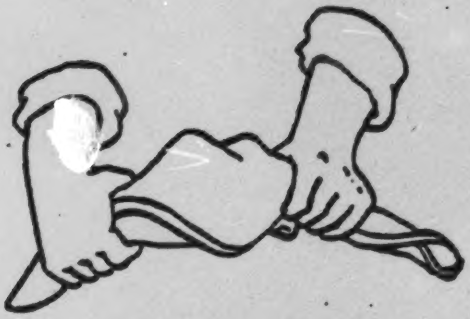
6. WAIT 5-10 MINUTES.

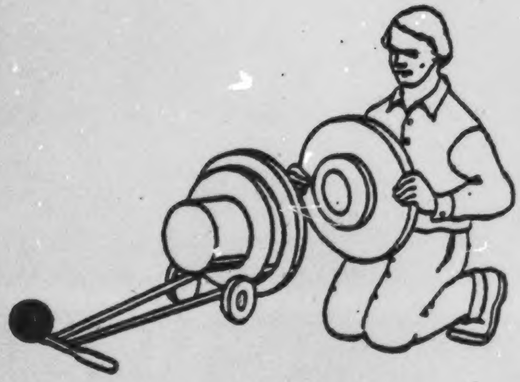




7. PUT THE CARPET PAD IN THE PAIL OF COLD WATER.

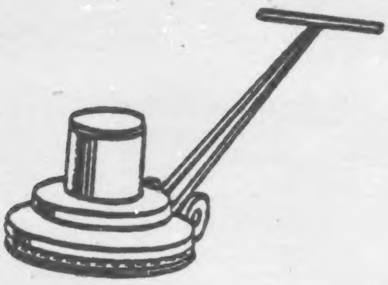
8. WRING OUT THE CARPET PAD. PUT IT ON THE CARPET.

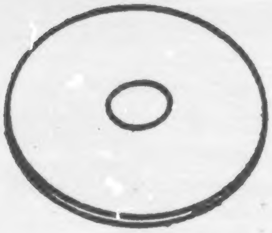




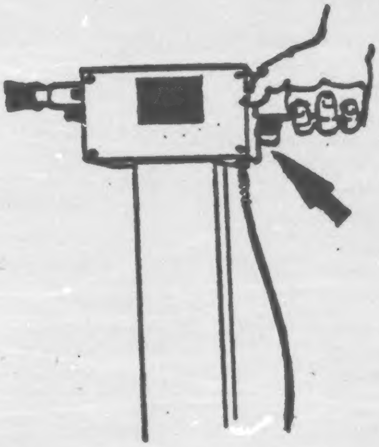
9. PUT THE SPECIAL DRIVE BLOCK ON THE FLOOR MACHINE. BE SURE IT IS ON CORRECTLY.

JOB STEPS

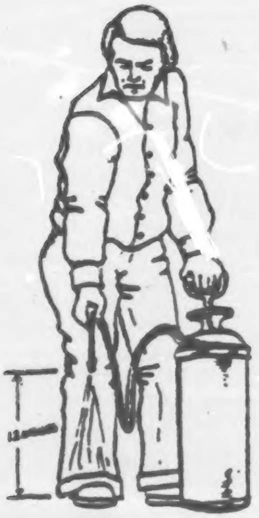




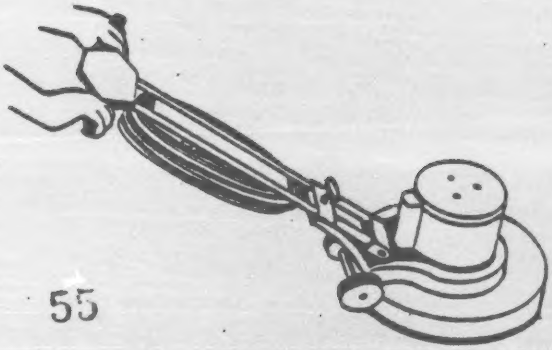
10. PUT THE FLOOR MACHINE ON THE CARPET PAD.



11. TURN ON THE MACHINE. MOVE THE MACHINE OVER THE AREA YOU SPRAYED WITH CARPET SHEEN. GO OVER THE AREA 2 TIMES.

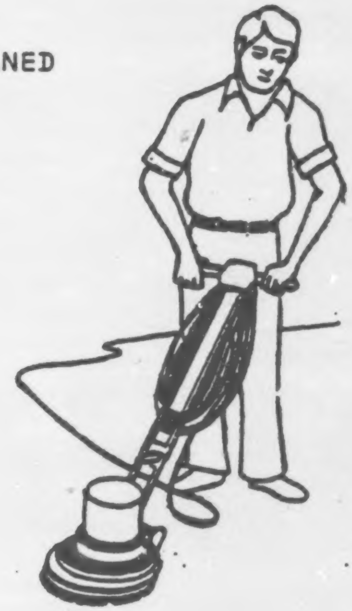


12. REPEAT JOB STEPS 3 THROUGH 10 ON A NEW 12 FOOT BY 12 FOOT AREA.



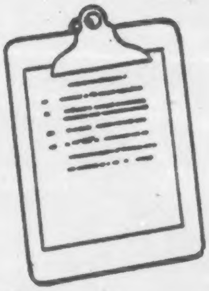
JOB STEPS

13. CONTINUE UNTIL YOU HAVE CLEANED THE WHOLE CARPET.

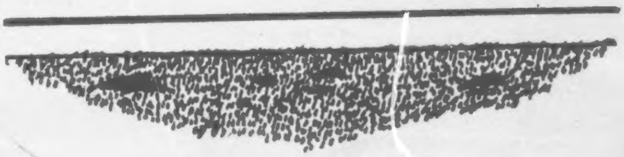


SPOT CLEANING

1. GET THE EQUIPMENT LISTED ON PAGE 2. USE YOUR CHECKLIST TO BE SURE YOU HAVE EVERYTHING.

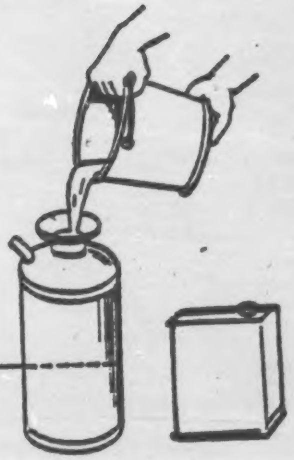


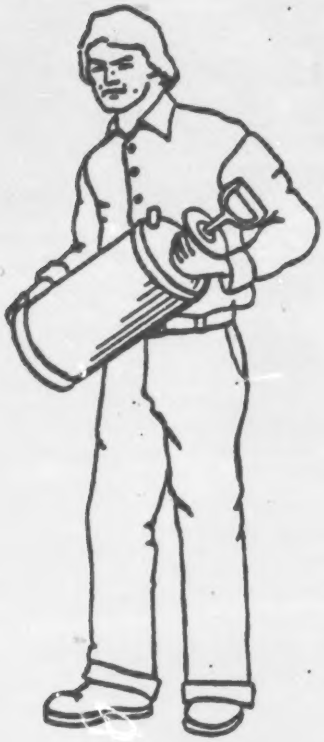
2. TAKE THE EQUIPMENT TO WHERE YOU WILL CLEAN.



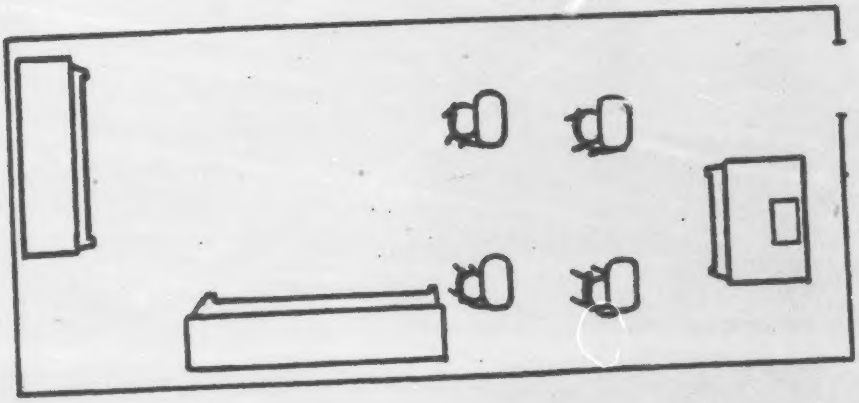
JOB STEPS

3. FILL THE HAND SPRAYER 1/2 WITH CARPET SHEEN AND 1/2 WITH COLD WATER. SHAKE WELL.



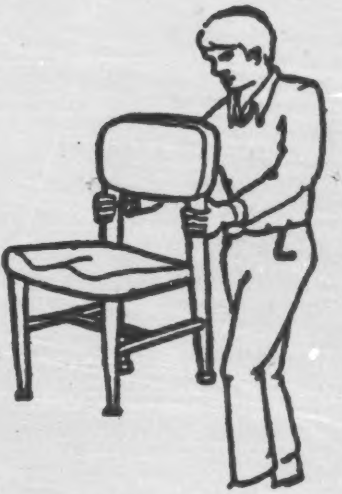


4. MAKE A MAP OF THE FURNITURE IN THE CARPET AREA.



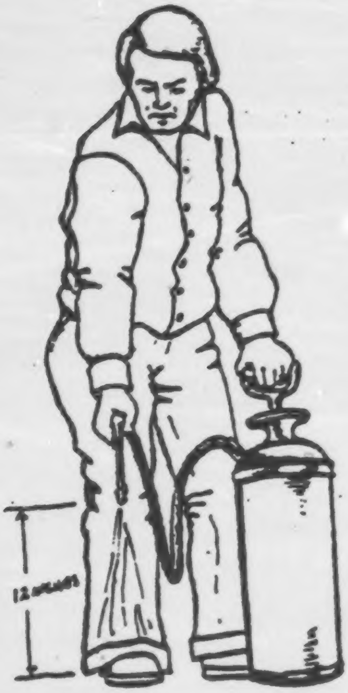
JOB STEPS

5. MOVE THE FURNITURE OUT OF THE CARPET AREA.

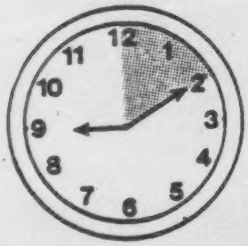


SAFETY NOTE

1. LIFT ONLY WITH YOUR LEGS.
2. GET HELP WITH HEAVY THINGS.

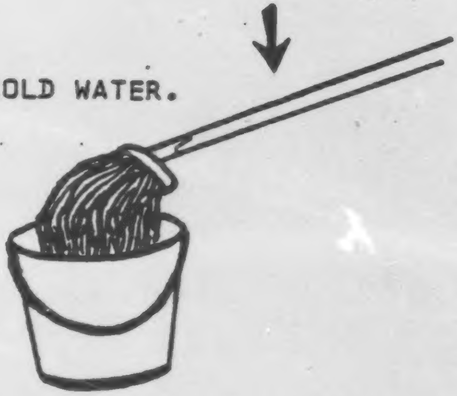


6. SPRAY ALL STAINS AND SPOTS WITH THE HAND SPRAYER. THE STAIN MUST BE WET WITH THE SOLUTION.



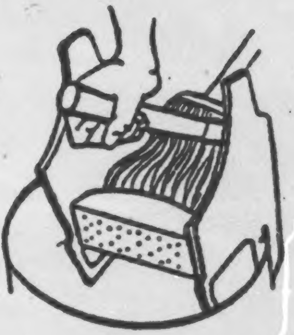
7. WAIT 5 - 10 MINUTES.

8. DIP THE MOP INTO THE COLD WATER.

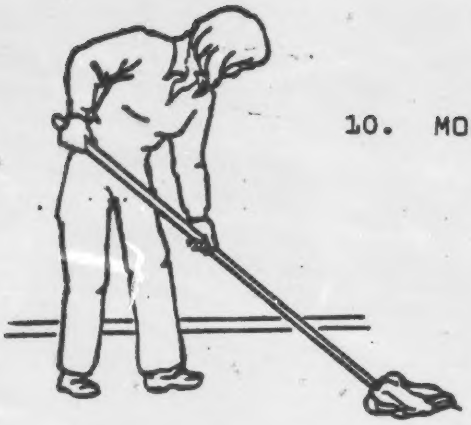


JOB STEPS

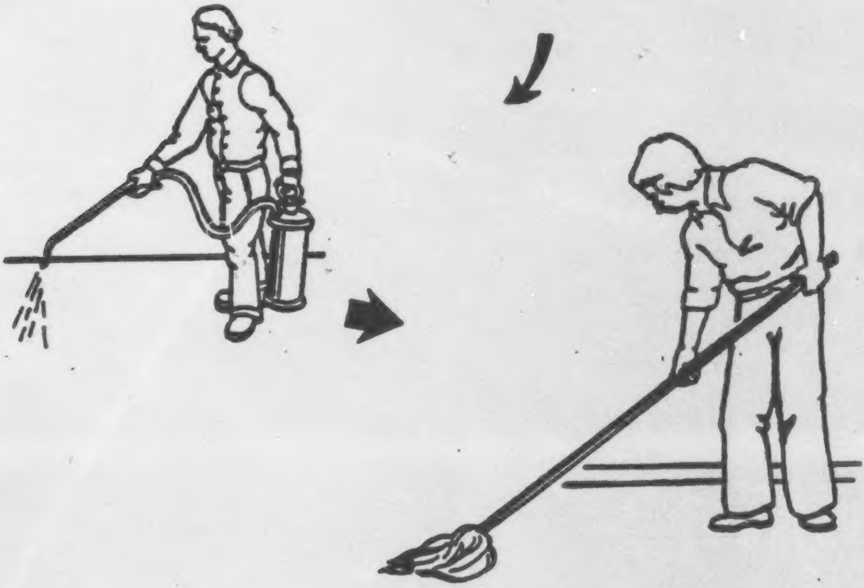
9. WRING IT OUT. IT MUST BE ALMOST DRY.



10. MOP OVER THE STAINS AND SPOTS.

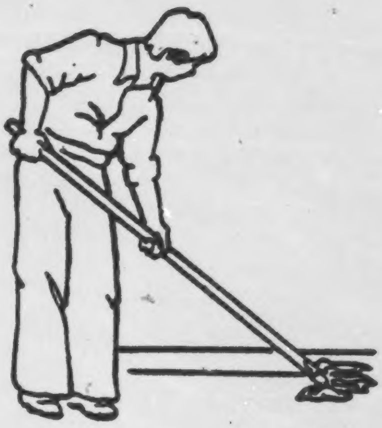


11. DO JOB STEPS 6, 7, 8, 9, AND 10 UNTIL ALL THE STAINS AND SPOTS ARE OUT.

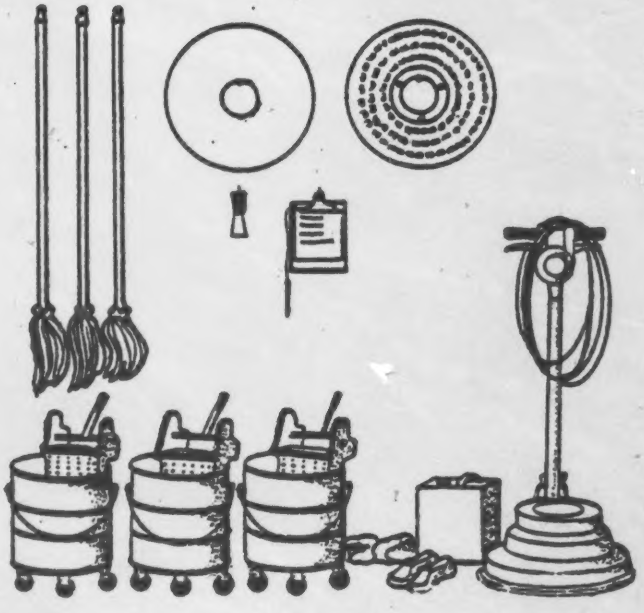


JOB STEPS

12. CONTINUE UNTIL YOU HAVE CLEANED THE WHOLE CARPET.



13. CLEAN THE EQUIPMENT AND RETURN IT TO THE STORAGE AREA.



building maintenance & engineering

unit: CARPET CARE

capital area career center

module: 2201 05 006 3 **date:** 12/6/76 **level:** 3

skill title: CARE OF CARPET

developed & written by: DWIGHT SMITH

visuals by: SANDY STARNAMAN AND MARIE GOUGEON

WORD GUIDE

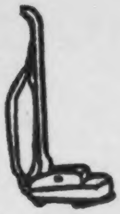
REFUSE - (REF-USE) TRASH, DIRT AND ANYTHING ELSE YOU DON'T WANT.

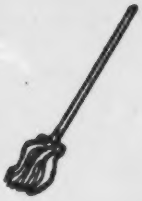
PERFORMANCE OBJECTIVE

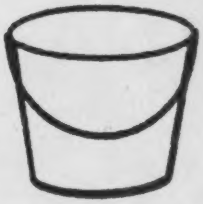
YOU ARE GOING TO LEARN:

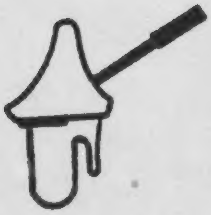
HOW TO CARE FOR A CARPET FOR 1 WEEK.

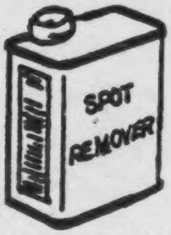
AND IN ORDER TO DO THIS YOU WILL NEED:


VACUUM CLEANER

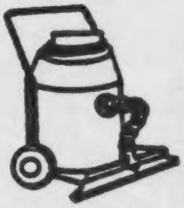

MOP

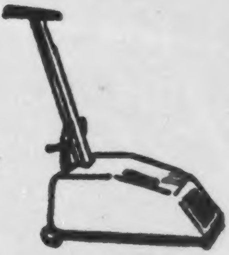

PAIL

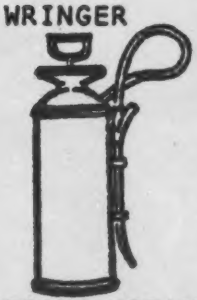

WRINGER

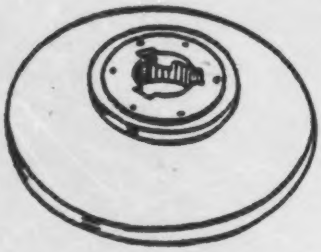


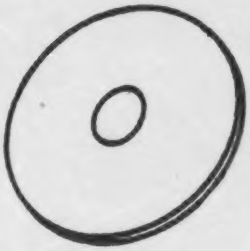
SPOT CLEANER

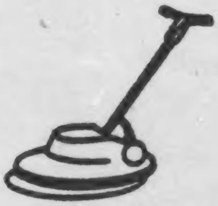

WET VACUUM CLEANER

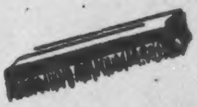

SHAMPOO MACHINE


PRESSURE SPRAYER


SPECIAL DRIVE BLOCK


CARPET PAD


FLOOR MACHINE


SHORT BRISTLED BRUSH

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE CLEANED A CARPET SO THAT NO SPOTS, DIRT, STAINS, OR REFUSE CAN BE SEEN FOR ONE WEEK.

INFORMATION

FOR YOUR REVIEW:

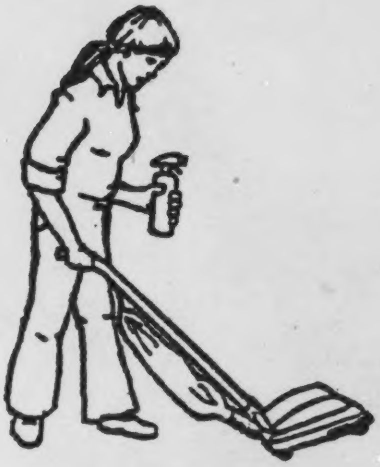
MODULES YOU HAVE DONE:

2201	05	003	3	VACUUM CLEANING
2201	05	004	3	SPOT CLEANING
2201	05	001	3	DRY FOAM SHAMPOO
2201	05	005	3	CARPETSHEEN
2201	05	002	3	SHAMPOO WITH ROTARY MACHINE

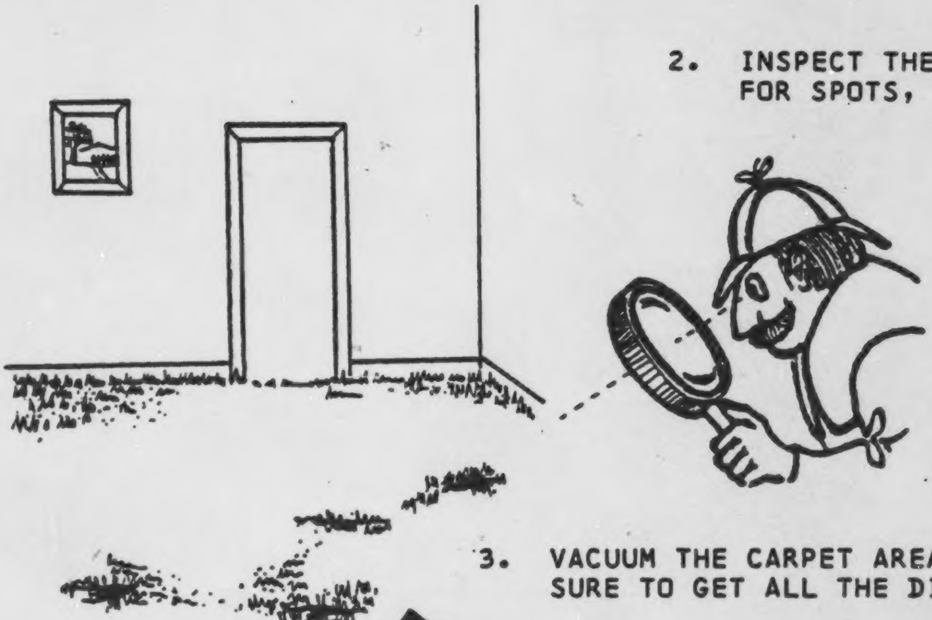
MAKE SURE YOU HAVE A CARPET CARE PERFORMANCE CHART AND AN EQUIPMENT CHECKLIST.

JOB STEPS

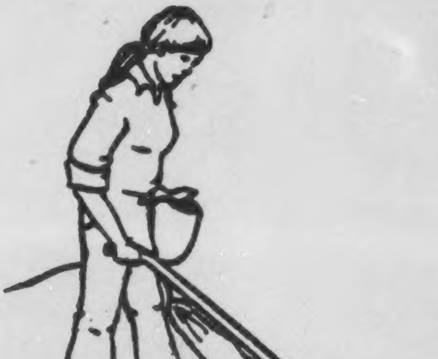
1. GO TO THE CARPET AREA



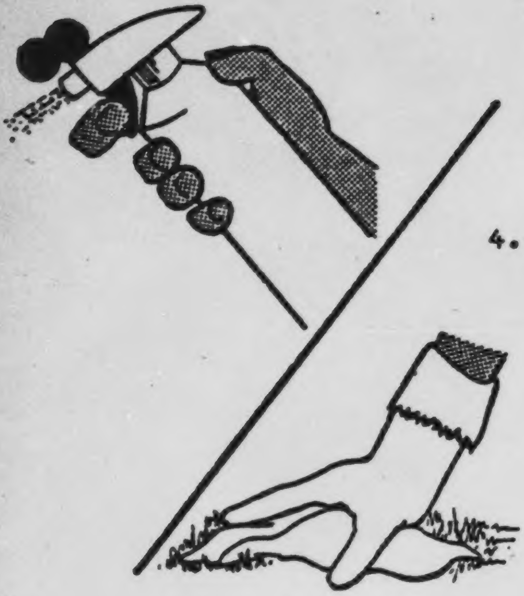
2. INSPECT THE CARPET. LOOK FOR SPOTS, STAINS, AND DIRT.



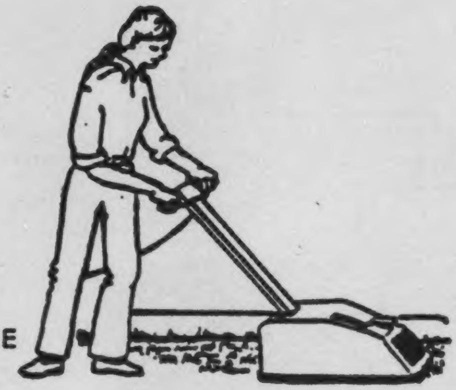
3. VACUUM THE CARPET AREA. BE SURE TO GET ALL THE DIRT.



JOB STEPS

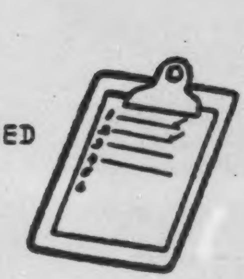


4. SPOT CLEAN THE CARPET. CLEAN ALL THE SPOTS, STAINS, AND DIRTY AREAS.



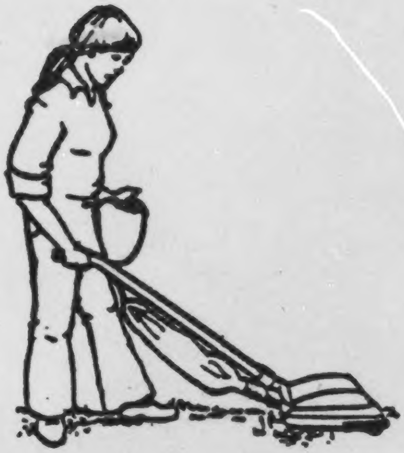
5. SHAMPOO THE CARPET AREA. ASK YOUR INSTRUCTOR WHAT METHOD TO USE ON YOUR CARPET AREA.

- -CARPET SHEEN
- -SHAMPOO WITH A ROTARY MACHINE
- -DRY FOAM SHAMPOO



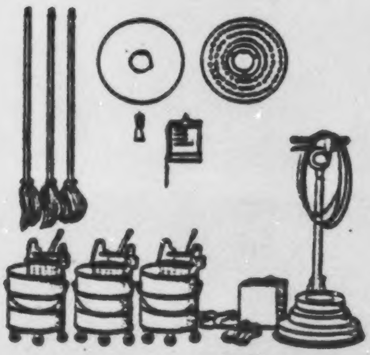
6. CHECK OFF THE EQUIPMENT YOU USED ON THE EQUIPMENT CHECK LIST.

7. DO ALL THE JOB STEPS YOU NEED TO EACH DAY TO KEEP THE CARPET CLEAN. IF YOU ARE NOT SURE WHAT TO DO, ASK YOUR INSTRUCTOR.

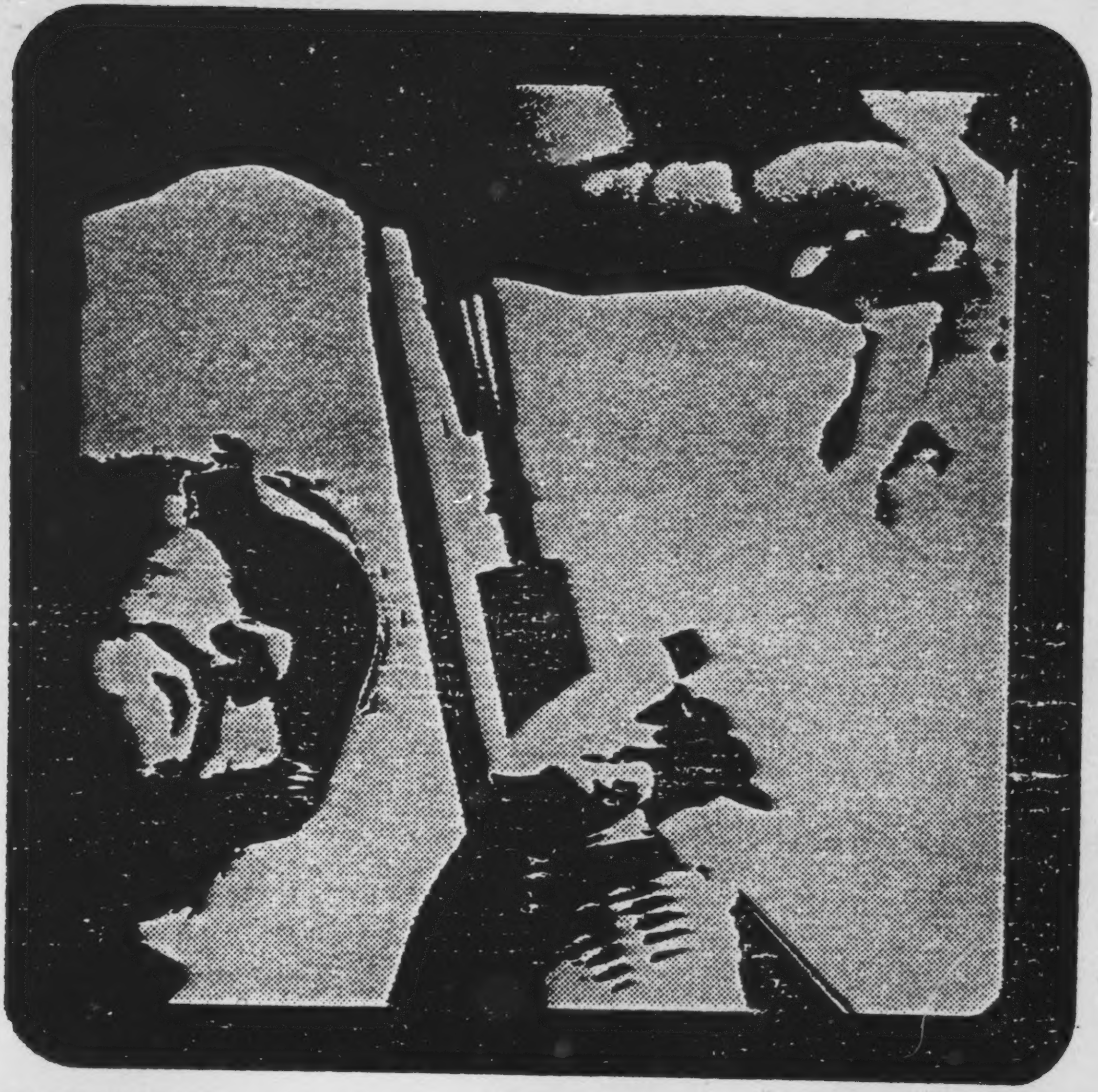


8. EACH DAY, FILL OUT THE CARPET CARE PERFORMANCE CHART IF YOU DO A JOB.

9. CLEAN ALL THE EQUIPMENT YOU USED AND RETURN IT TO THE STORAGE AREA.



JOB STEPS



building maintenance & engineering

unit: OFFICE CLEANING

capital area career center

module: 2201 06 001 3 date: 12-19-76 level: 1

skill title: DUSTING

developed & written by: DWIGHT SMITH

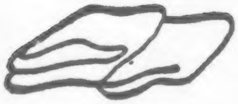
visuals by: SANDRA STARNAMAN

PERFORMANCE OBJECTIVE

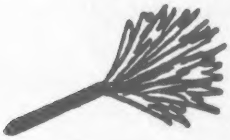
YOU ARE GOING TO LEARN:

HOW TO DUST.

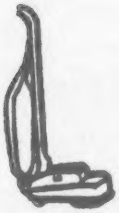
AND IN ORDER TO DO THIS YOU WILL NEED:



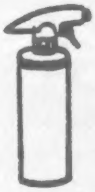
WIPING CLOTHS



A HAND DUSTER



A VACUUM CLEANER



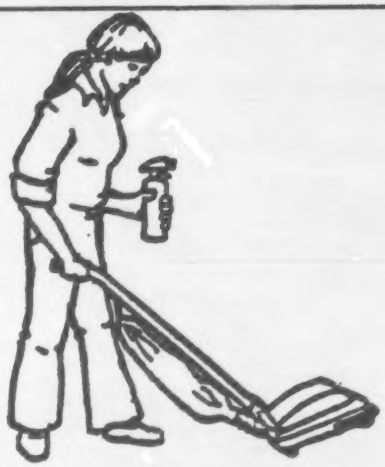
DUSTING SOLUTION AND GLASS CLEANER

WE WILL KNOW THAT YOU CAN DO IT WHEN:

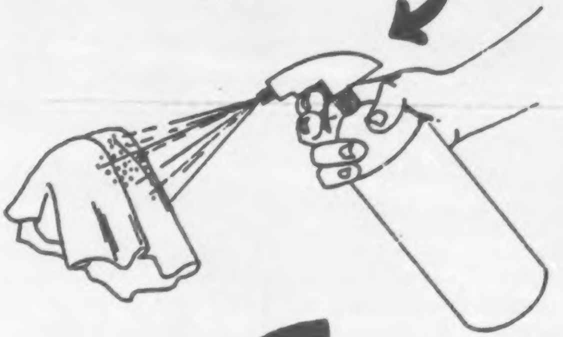
YOU HAVE REMOVED ALL THE DUST FROM AN ASSIGNED AREA.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
THE BEST TIME TO DUST IS EARLY IN THE MORNING OR LATE AT NIGHT. THIS MAKES SURE THAT THE DUST WILL SETTLE BEFORE THE AREA IS USED.		

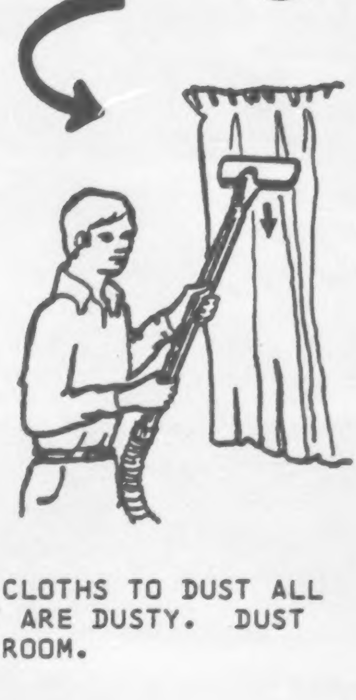
1. GATHER YOUR EQUIPMENT.

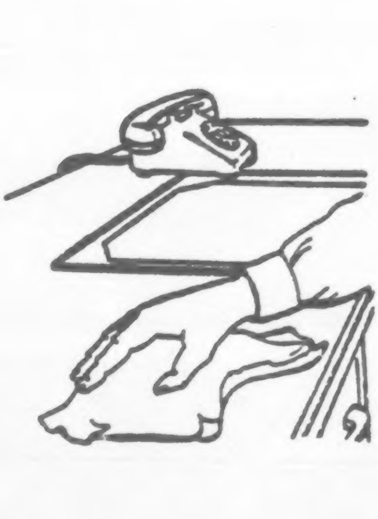


2. IF THERE IS DUSTING SOLUTION, SPRAY SOME ON YOUR WIPING CLOTHS (THIS KEEPS THE DUST FROM FLYING)



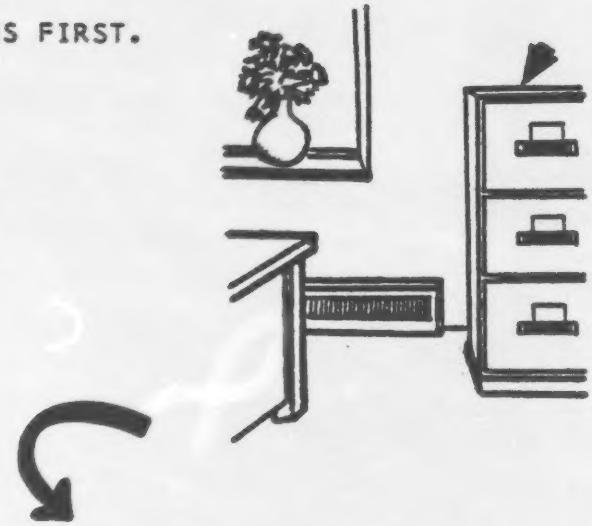
3. USE THE VACUUM CLEANER TO DUST CURTAINS. ALWAYS START AT THE TOP. IF NO VACUUM CAN BE USED, BRUSH THE CURTAINS WITH A BENCH BRUSH. START AT THE TOP.





4. USE WIPING CLOTHS TO DUST ALL PLACES THAT ARE DUSTY. DUST AROUND THE ROOM.

5. ALWAYS DUST HIGH PLACES FIRST.



6. SOME OF THE THINGS YOU MUST DUST:

DESKS

PICTURE FRAMES

FILE CABINETS

TABLES

CHAIRS

WINDOW SILLS

REGISTERS

PIPES

MAPS

FANS

HAND RAILS

CEILINGS AND WALLS

LEDGES

DOOR JAMS

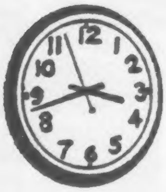
CHALK CHANNELS

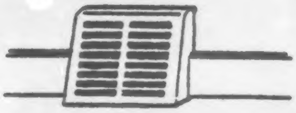
RADIATORS

LIGHTS

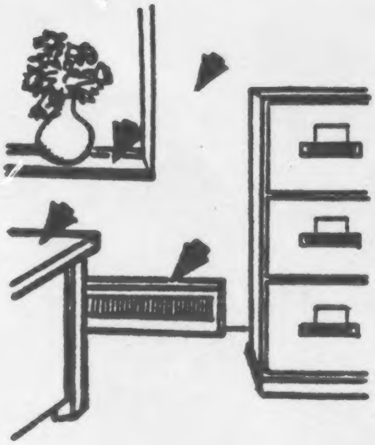
FURNITURE

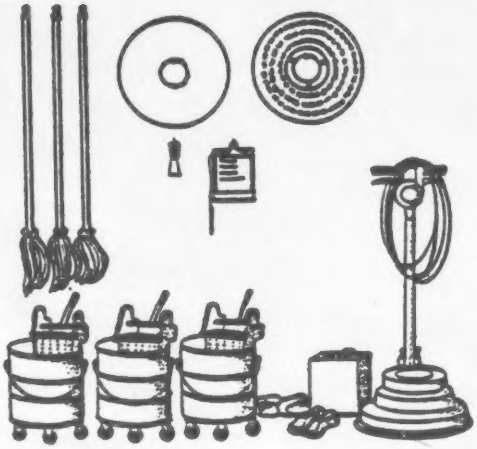
CLOCKS





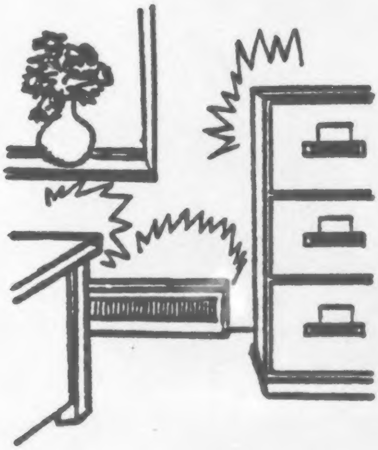
7. LOOK AT THE ROOM YOU ARE IN. DO YOU SEE MORE THINGS TO DUST? ASK YOUR INSTRUCTOR IF YOU MUST DUST THEM TOO.

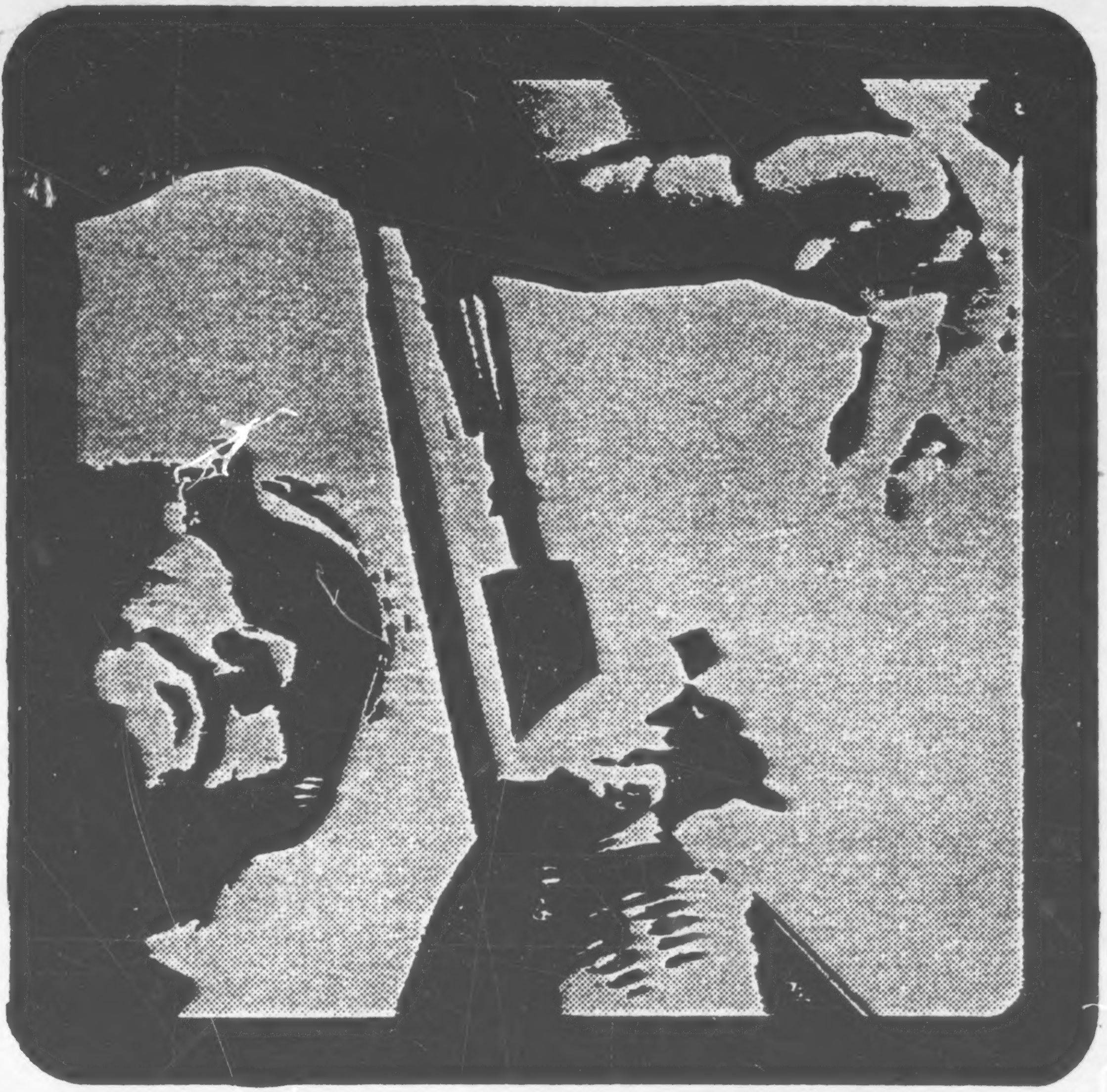




8. WHEN DONE, RETURN ALL EQUIPMENT.

DON'T FORGET! NEVER LEAVE ANY EQUIPMENT IN YOUR WORK AREA.





building maintenance & engineering

unit: OFFICE CLEANING

capital area career center

module: 2201 06 002 3 **date:** 12/19/76 **level:** 1

skill title: CLEANING DESKTOPS

developed & written by: DWIGHT SMITH

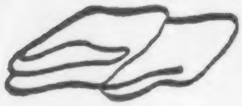
visuals by: MARIE GOUGEON AND SANDY STARNAMAN

PERFORMANCE OBJECTIVE

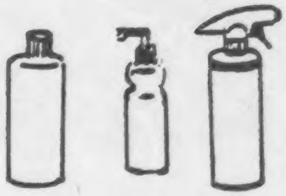
YOU ARE GOING TO LEARN:

HOW TO CLEAN A DESK TOP.

AND IN ORDER TO DO THIS YOU WILL NEED:



WIPING CLOTHS



FURNITURE POLISH
GLASS CLEANER
A SPRAY BOTTLE

WE WILL KNOW THAT YOU CAN DO IT WHEN:

YOU HAVE CLEANED A DESK TOP SO THAT IT HAS NO FINGERPRINTS, DUST, OR STREAKS ON IT.

INFORMATION

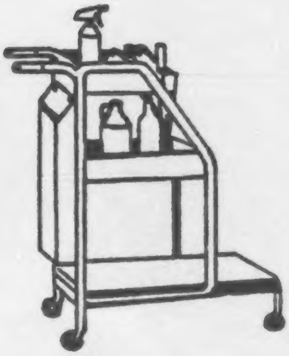
WHEN YOU CLEAN AN OFFICE, YOU MUST NOT CHANGE THE PAPERS OR EQUIPMENT ON THE DESK.

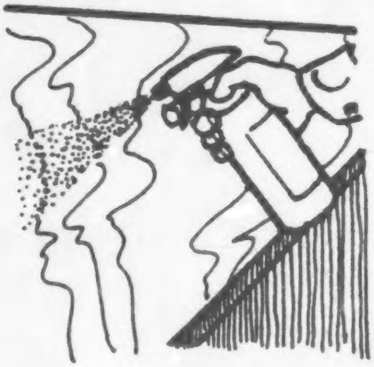
ALSO BE CAREFUL TO TAKE ALL OF YOUR EQUIPMENT WHEN YOU ARE DONE.

JOB STEPS

1. GET YOUR EQUIPMENT. USE YOUR CHECKLIST TO BE SURE YOU HAVE ALL EQUIPMENT.

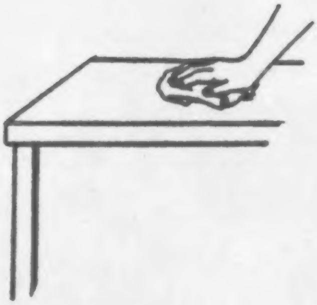
2. USE A CART OR CARRIER FOR YOUR EQUIPMENT, IF THERE IS ONE.





3. FOR A DESK WITH A GLASS TOP, SPRAY A LITTLE GLASS CLEANER ON THE DESK TOP.

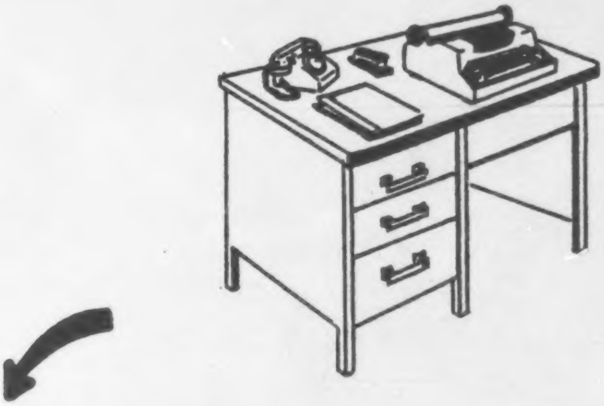
4. WIPE THE DESK CLEAN WITH A CLOTH.

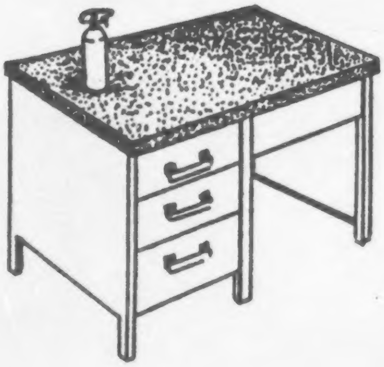


JOB STEPS

5. LIFT AND WIPE UNDER THINGS, SUCH AS TELEPHONES, STAPLERS, TYPEWRITERS OR PAPERS. PUT THEM BACK WHERE THEY WERE.

CAUTION: SOME EMPLOYERS DO NOT WANT PAPERS MOVED. ASK YOUR SUPERVISOR ABOUT THE RULES.

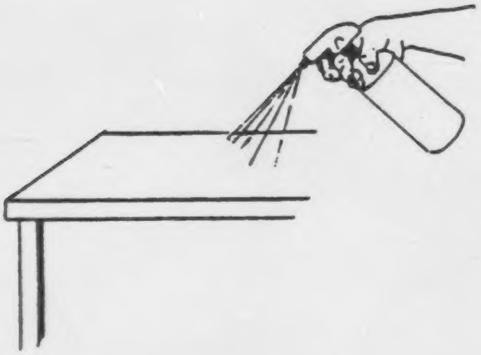


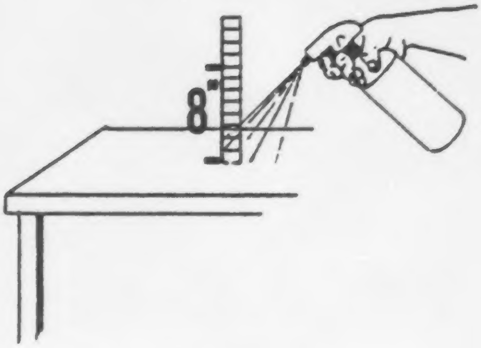


6. DESK TOPS MADE OF FORMICA CAN ALSO BE CLEANED WITH GLASS CLEANER.

JOB STEPS

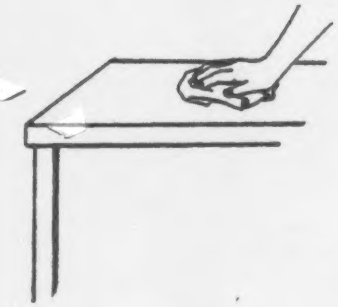
7. FOR DESK TOPS MADE OF WOOD, USE FURNITURE POLISH. BE SURE TO READ THE INSTRUCTIONS ON THE CAN.





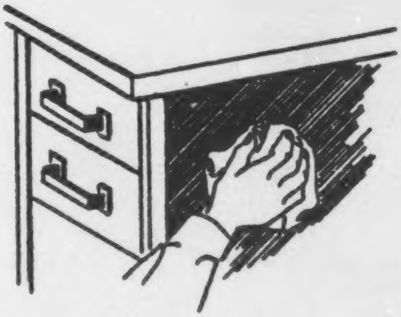
8. SHAKE THE BOTTLE, THEN SPRAY FROM ABOUT 8 INCHES ABOVE THE DESK.

9. WIPE QUICKLY WITH A CLEAN WIPING CLOTH.

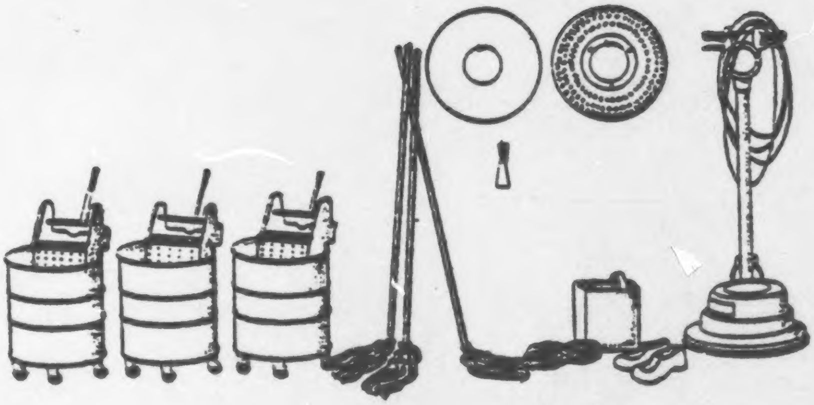


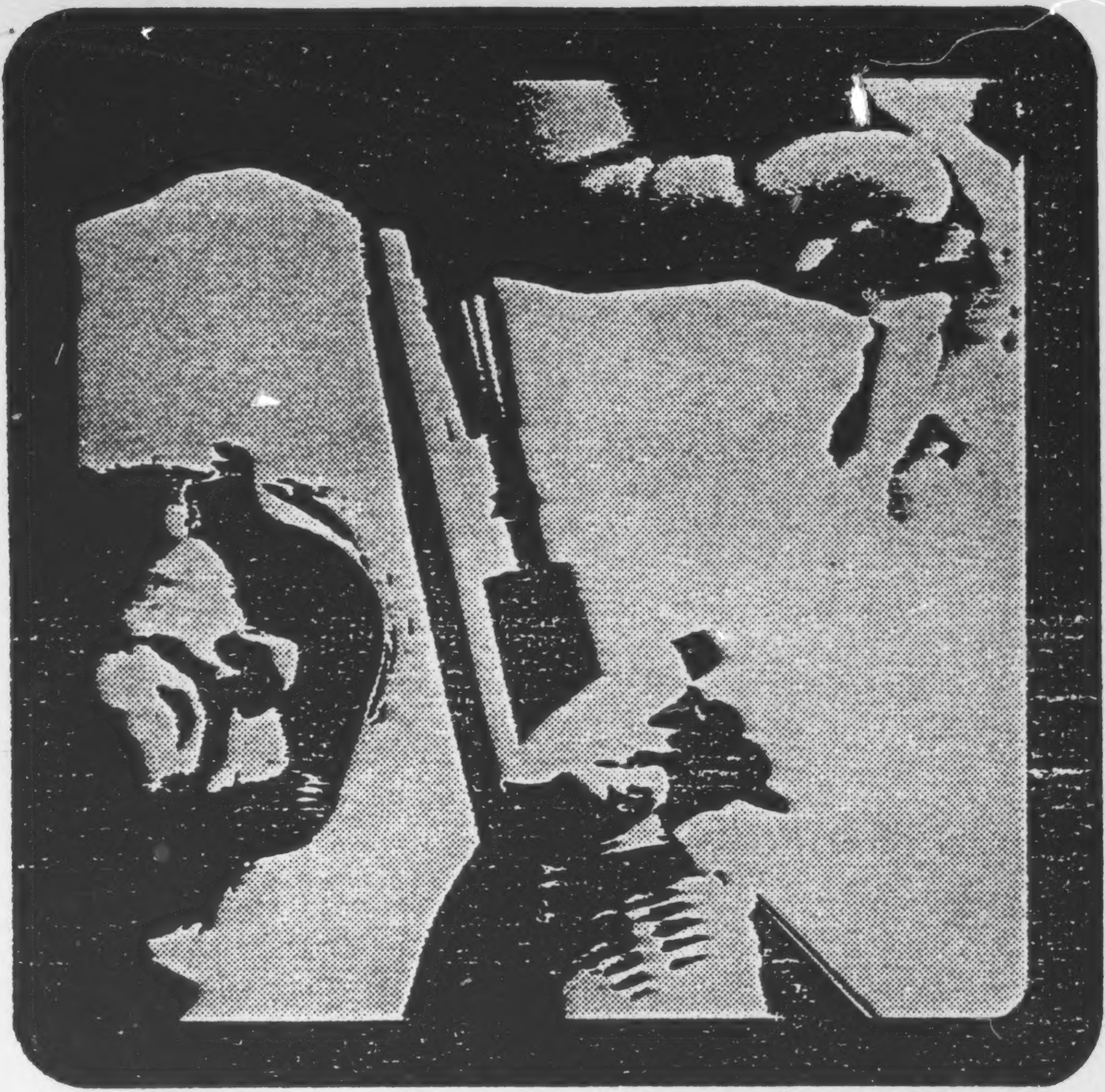
JOB STEPS

10. ALSO WIPE SIDES OF DESK THAT HAVE DUST ON THEM.



11. WHEN DONE, RETURN EQUIPMENT TO THE STORAGE AREA.





building maintenance & engineering

unit: OFFICE CLEANING

capital area career center

module: 2201 06 003 3 date: 12-19-76 level: 2

skill title: COMPLETE CARE OF OFFICES

developed & written by: DWIGHT SMITH

visuals by: SANDRA STARNAMAN

WORD GUIDE

DETERGENT - LIQUID OR POWDER SOAP ADDED TO WATER.

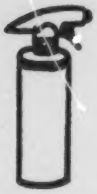
LEDGES - EDGES OF WALLS OR FURNITURE.

PERFORMANCE OBJECTIVE

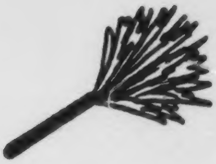
YOU ARE GOING TO LEARN:

HOW TO CLEAN OFFICES.

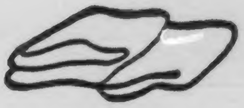
AND IN ORDER TO DO THIS YOU WILL NEED:



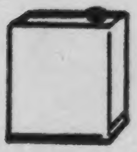
FURNITURE POLISH



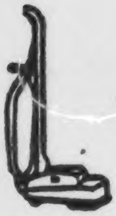
DUSTING BRUSH



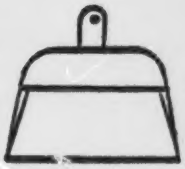
WIPING CLOTHS



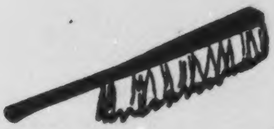
SPOT REMOVER



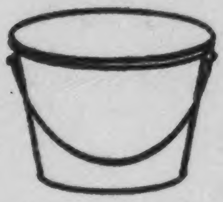
VACUUM CLEANER



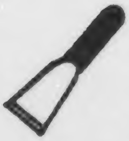
DUST PAN



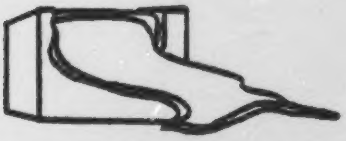
BENCH BRUSH



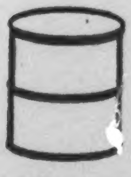
BUCKET



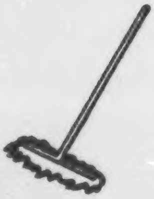
PUTTY KNIFE



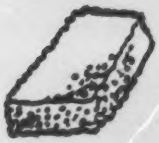
EXTRA PLASTIC BASKET LINERS



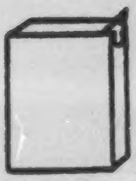
METAL CAN FOR CIGARETTE BUTTS



DUST MOP



SPONGE



DETERGENT

WORD GUIDE

REVIEW - STUDY AGAIN.

WE WILL KNOW THAT YOU CAN DO IT WHEN:

YOU HAVE CLEANED AN OFFICE. NO DUST, STAINS, OR DIRT MUST BE SEEN ON FLOORS, CARPETS, FURNITURE, WALLS AND LEDGES.

INFORMATION

REVIEW MODULES:

2201	05	003	3	VACUUMING
2201	06	001	3	DUSTING
2201	06	002	3	CLEANING DESK TOPS
2201	02	003	3	WASHING WALLS

AFTER YOU HAVE REVIEWED THE ABOVE MODULES, WATCH THE SLIDE TAPE FOR THIS MODULE.

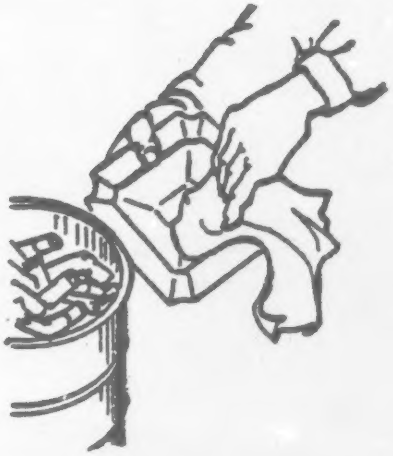
WHEN YOU HAVE WATCHED THE SLIDE TAPE, YOU CAN STUDY THE JOB STEPS FOR THIS MODULE.

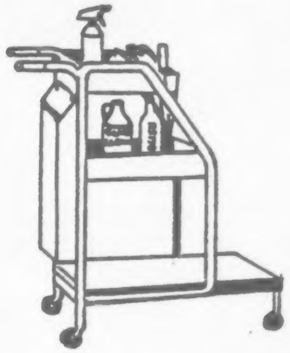
JOB STEPS CHECKLIST

1. TAKE A LARGE TRASH BASKET TO THE WORK AREA. ALSO TAKE EXTRA TRASH BASKET LINERS.
2. EMPTY THE OFFICE TRASH BASKETS INTO YOUR LARGE TRASH BASKET. REPLACE DIRTY LINERS.
3. GET A METAL CAN FOR CIGARETTE BUTTS. ALSO GET A DAMP WIPING CLOTH.
4. EMPTY OFFICE ASH TRAYS INTO YOUR METAL CAN. WIPE ASH TRAYS CLEAN WITH CLOTH.
5. GET THE REST OF YOUR EQUIPMENT AND TAKE TO THE WORK AREA.
6. DUST THE CURTAINS WITH THE VACUUM. START AT THE TOP.
7. VACUUM THE CARPETS AND DUST MOP THE HARD FLOORS.
8. PICK UP DIRT PILES WITH THE BENCH BRUSH AND DUST PAN.
9. USE YOUR PUTTY KNIFE TO PICK UP THINGS STUCK TO FLOORS AND CARPETS.
10. DUST ALL PLACES THAT COLLECT DUST ON WALLS, CABINETS, DESKS, LEDGES, AND REGISTERS.
11. USE SPOT REMOVER AND WIPING CLOTH TO REMOVE STAINS ON CARPETS.
12. USE SPONGE AND DETERGENT SOLUTION TO REMOVE HEAVY DIRT FROM LEDGES, WINDOW SILLS, OR TABLES.
13. POLISH DESKS AND FURNITURE. BE SURE TO LEAVE ALL EQUIPMENT AND PAPERS AS THEY WERE BEFORE YOU BEGAN.
14. RETURN ALL EQUIPMENT. CLEAN THE EQUIPMENT.
15. RETURN TO THE WORK AREA AND CHECK TO BE SURE THAT YOU HAVE LEFT NO EQUIPMENT THERE.
16. TURN OUT THE LIGHTS IN THE OFFICE IF THEY ARE NOT BEING USED.

JOB STEPS

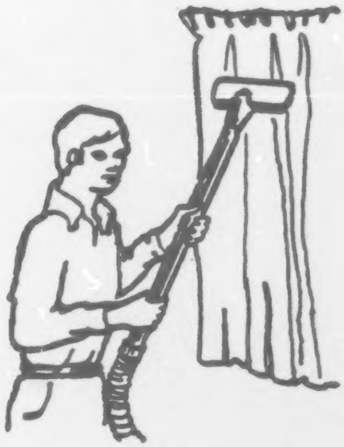
4. EMPTY OFFICE ASH TRAYS INTO YOUR METAL CAN. WIPE ASH TRAYS CLEAN WITH CLOTH.





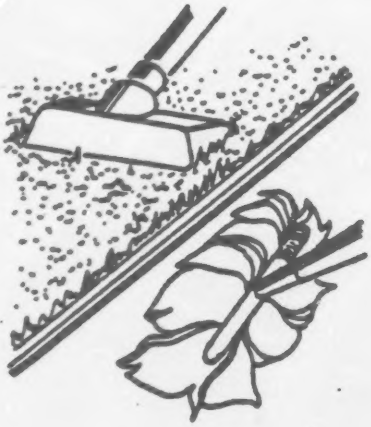
5. GET THE REST OF YOUR EQUIPMENT AND TAKE TO THE WORK AREA.

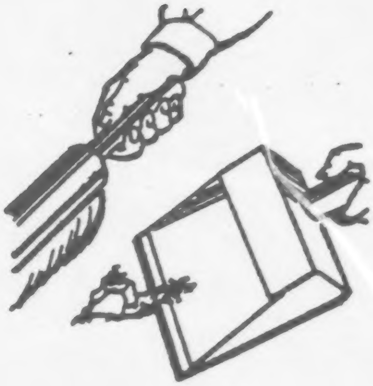
6. DUST THE CURTAINS WITH THE VACUUM. START AT THE TOP.



JOB STEPS

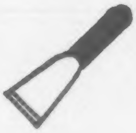
7. VACUUM THE CARPETS AND DUST MOP THE HARD FLOORS.

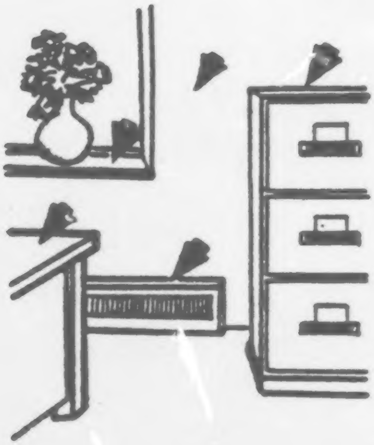




8. PICK UP DIRT PILES WITH THE BENCH BRUSH AND DUST PAN.

9. USE YOUR PUTTY KNIFE TO PICK UP THINGS STUCK TO FLOORS AND CARPETS.

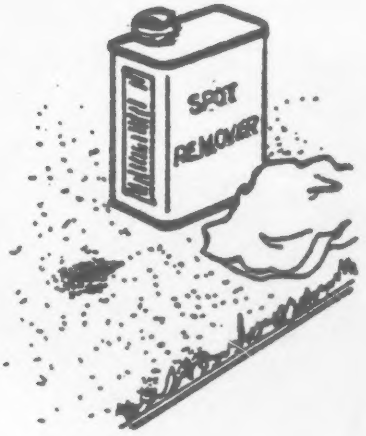


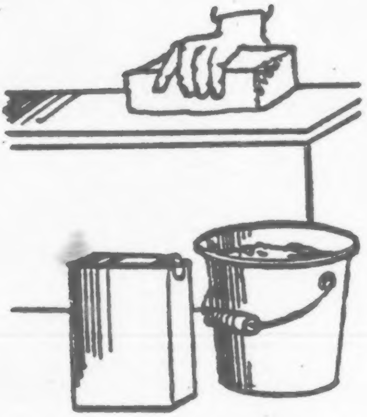


10. DUST ALL PLACES THAT COLLECT DUST ON WALLS, CABINETS, DESKS, LEDGES, AND REGISTERS.

JOB STEPS

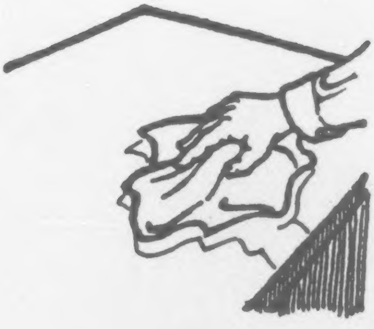
11. USE SPOT REMOVER AND WIPING CLOTH TO REMOVE STAINS ON CARPETS.





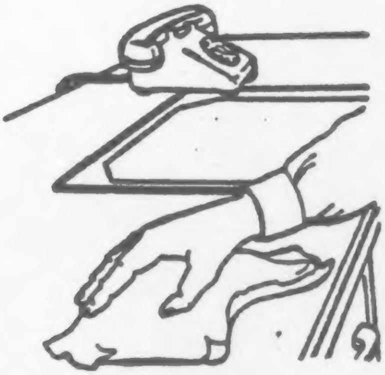
12. USE SPONGE AND DETERGENT SOLUTION TO REMOVE HEAVY DIRT FROM LEDGES, WINDOW SILLS, OR TABLES.

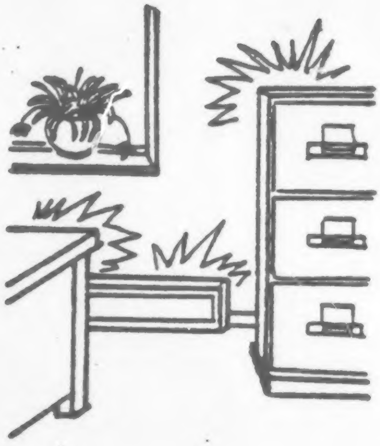
13. POLISH DESKS AND FURNITURE. BE SURE TO LEAVE ALL EQUIPMENT AND PAPERS AS THEY WERE BEFORE YOU BEGAN.



JOB STEPS

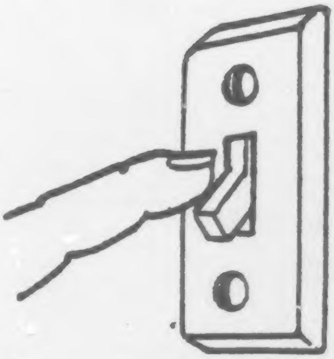
14. RETURN ALL EQUIPMENT. CLEAN THE EQUIPMENT.

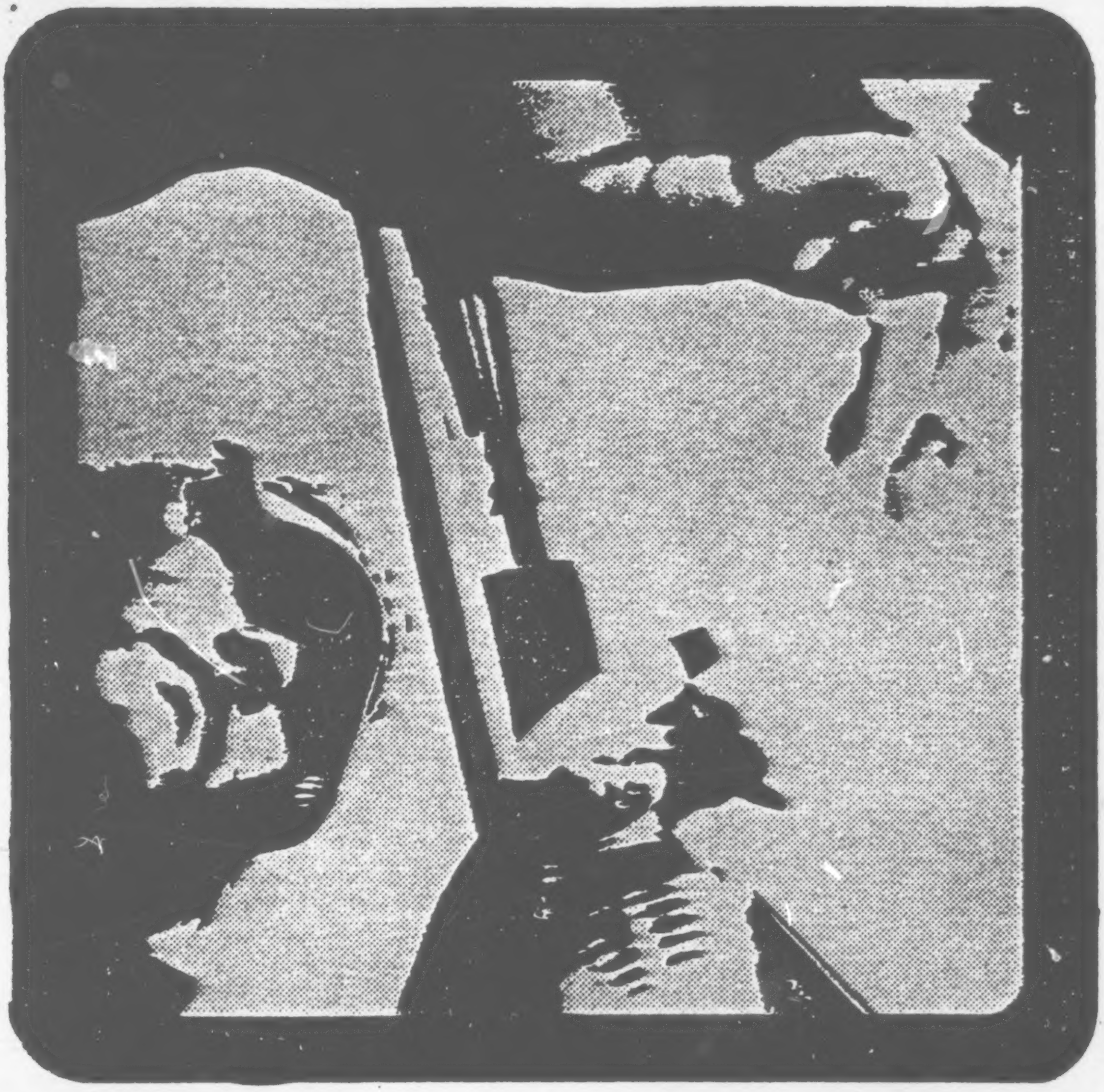




15. RETURN TO THE WORK AREA AND CHECK TO BE SURE THAT YOU HAVE LEFT NO EQUIPMENT THERE.

16. TURN OUT THE LIGHTS IN THE OFFICE IF THEY ARE NOT BEING USED.





building maintenance & engineering

unit: EXTERIOR MAINTENANCE

capital area career center

module: 2201 07 001 3 date: 5/77 level:

skill title: REMOVAL OF SNOW AND ICE

developed & written by: DWIGHT SMITH

visuals by: BEVAN SUITS

WORD GUIDE

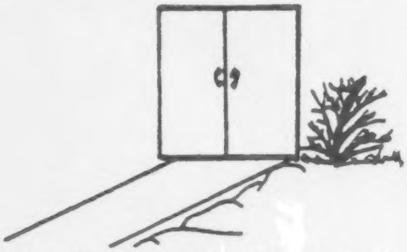
PELLETS - A SMALL, ROUND ITEM.

PERFORMANCE OBJECTIVE

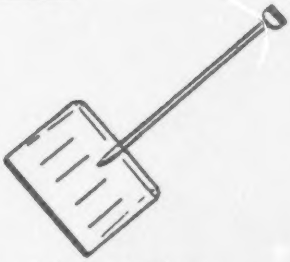
YOU ARE GOING TO LEARN:

HOW TO REMOVE SNOW AND ICE FROM WALKWAYS

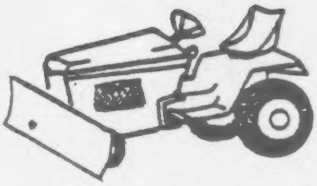
AND IN ORDER TO DO THIS YOU WILL NEED:



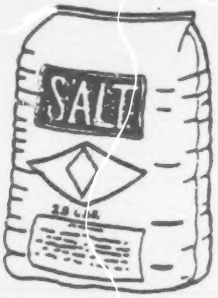
SNOW AND/OR ICE COVERED WALKWAYS



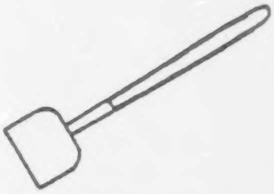
SNOW SHOVEL



POWER SNOW-REMOVER (SNOW BLOWER, SNOW PLOW)

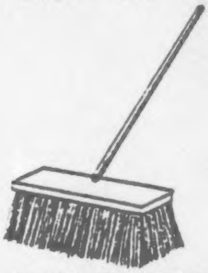


SAND OR SALT PELLETS

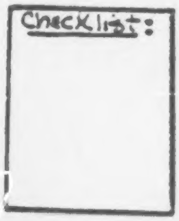


ICE SCRAPER

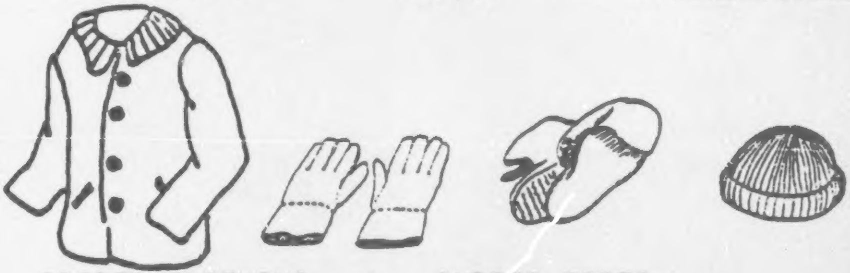
BUCKET



STREET BRUSH



PENCIL AND CHECKLIST



PROPER CLOTHING:
A. RUBBER BOOTS
B. GLOVES AND HAT
C. WINTER COAT

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE REMOVED ALL SNOW AND, USING SAND/SALT PELLETS, ALL ICE FROM THE WALKWAYS.

INFORMATION

WHY DO WE REMOVE SNOW AND ICE FROM WALKWAYS?

BECAUSE SNOW OR ICE ON SIDEWALKS CAN CAUSE PEOPLE TO SLIP, FALL AND HURT THEMSELVES.

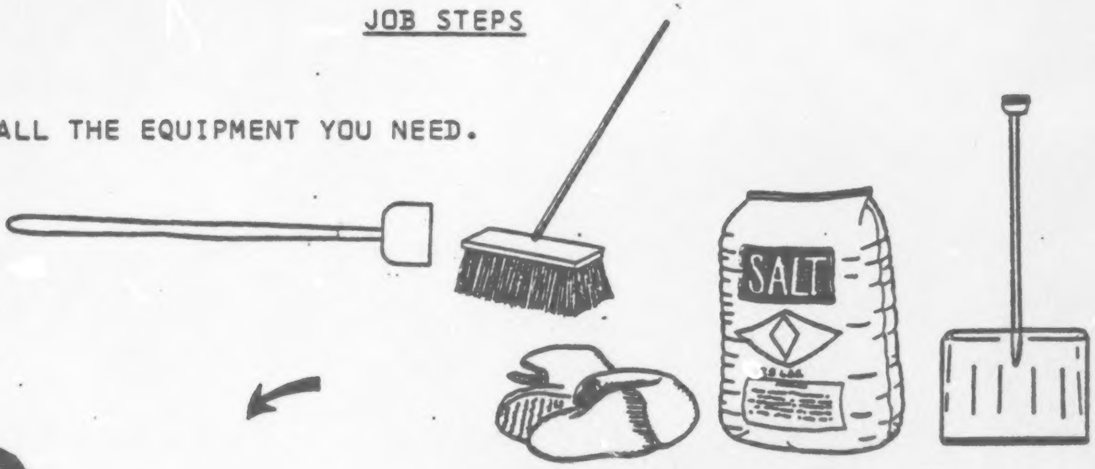
WHEN IT SNOWS, YOU SHOULD REMOVE SNOW AND ICE FROM WALKWAYS BEFORE PEOPLE WALK ON THEM.

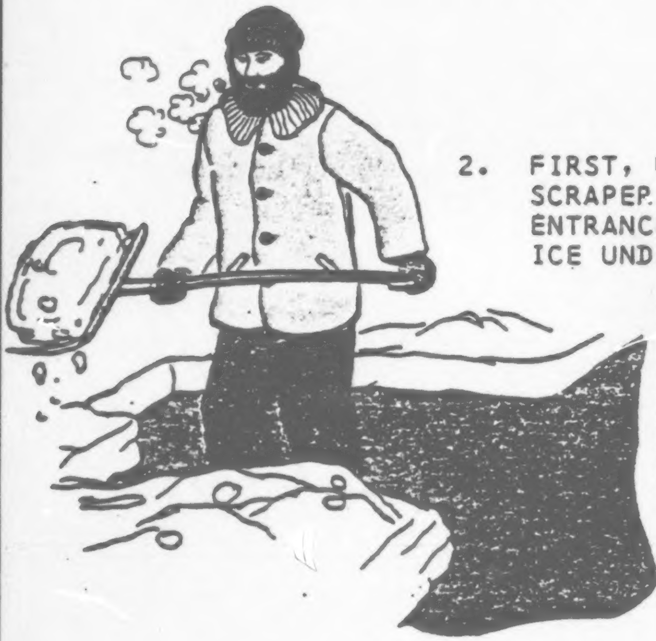
AFTER YOU REMOVE SNOW FROM WALKWAYS, PUT SALT PELLETS OR SAND ON ICE SPOTS THAT ARE LEFT,

WHEN THE ICE HAS MELTED, SWEEP UP THE SAND OR SALT. IF YOU SEE SAND IN THE BUILDING, CLEAN IT UP RIGHT AWAY. WHEN IT SNOWS, PUT DOORMATS IN DOORWAY TO COLLECT WATER TO KEEP PEOPLE FROM SLIPPING.

JOB STEPS

1. GET ALL THE EQUIPMENT YOU NEED.

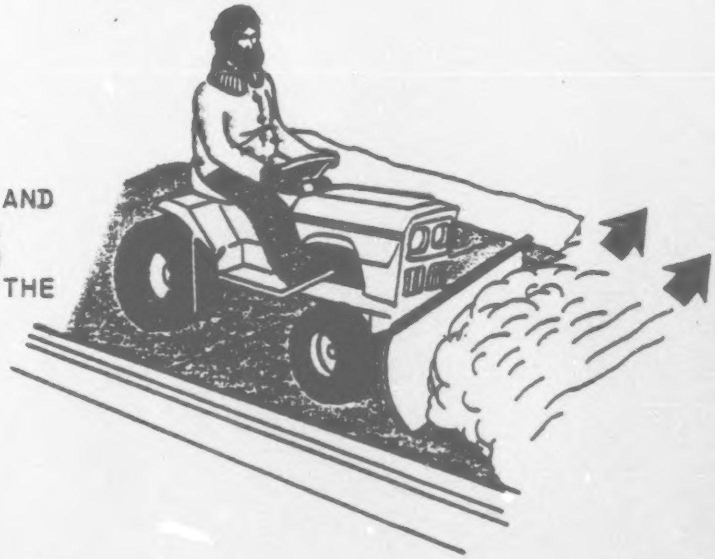




2. FIRST, USING SNOW SHOVEL AND ICE SCRAPER, SHOVEL THE SNOW OFF THE ENTRANCEWAYS, AND SCRAPE UP ANY ICE UNDERNEATH.

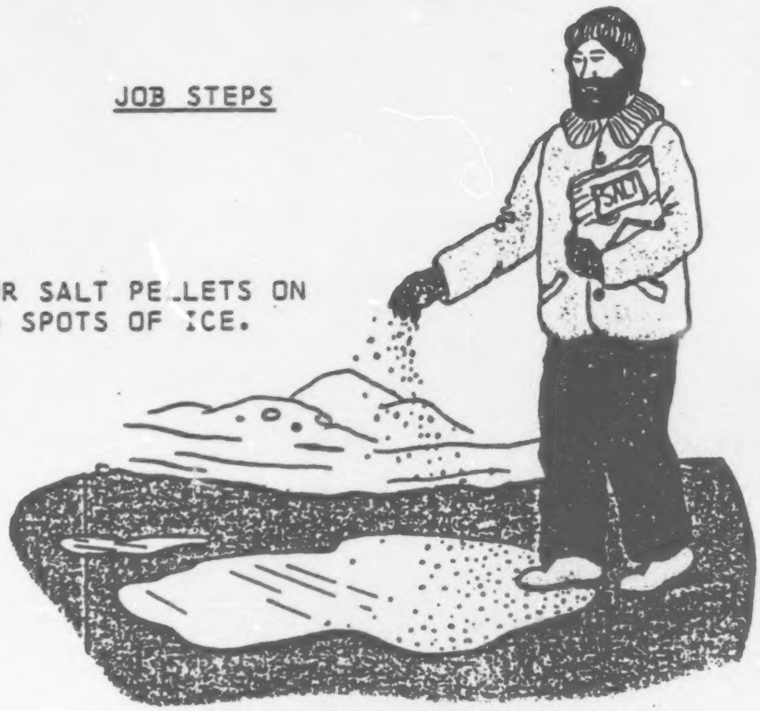
CAUTION: LIFT WITH YOUR LEGS, NOT YOUR BACK. PUSH WITH YOUR LEGS. BE CAREFUL NOT TO STRAIN YOUR BACK.

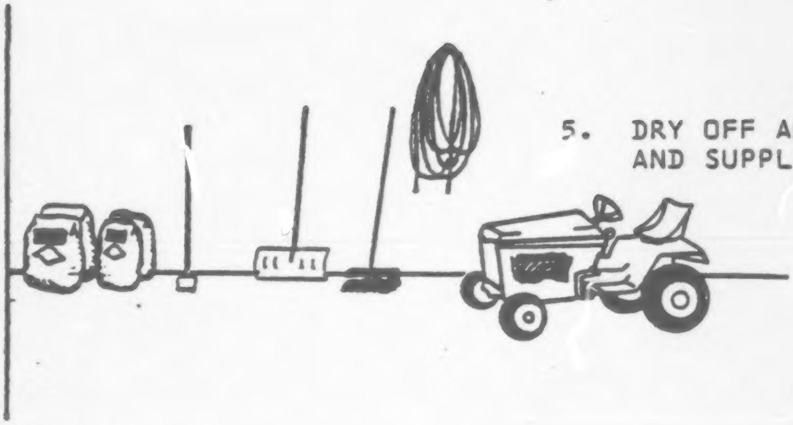
3. YOU USUALLY CLEAR SIDEWALKS AND DRIVEWAYS WITH A SNOWPLOW OR SNOWBLOWER. BE SURE TO PUSH THE SNOW ONTO THE LAWN, NOT THE STREET.



JOB STEPS

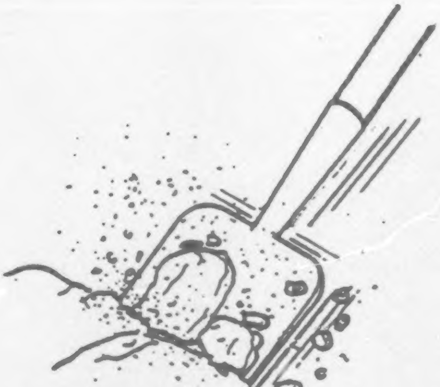
4. SPREAD SAND OR SALT PELLETS ON ANY REMAINING SPOTS OF ICE.





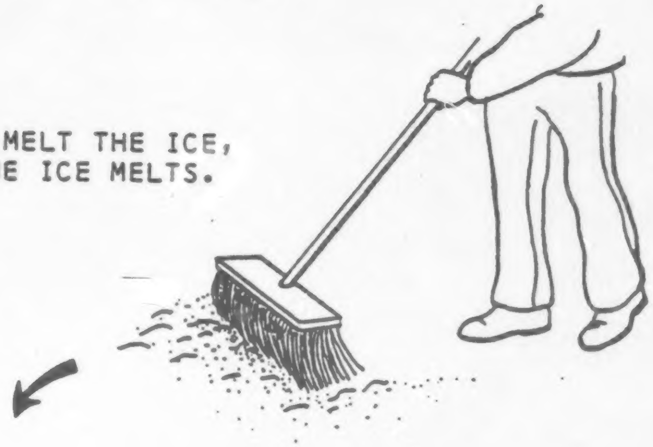
5. DRY OFF AND THEN PUT ALL EQUIPMENT AND SUPPLIES BACK IN THE RIGHT PLACE.

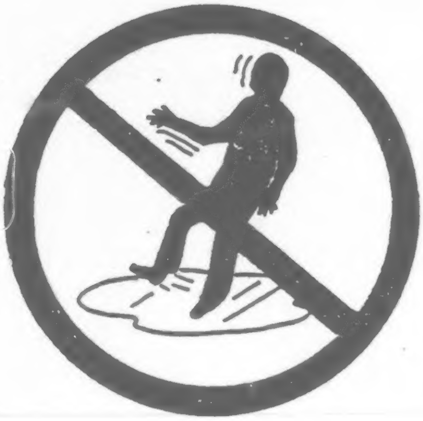
6. CHECK THE ICY AREAS OFTEN. WHEN THE ICE MELTS, SHOVEL OR SCRAPE IT OFF.



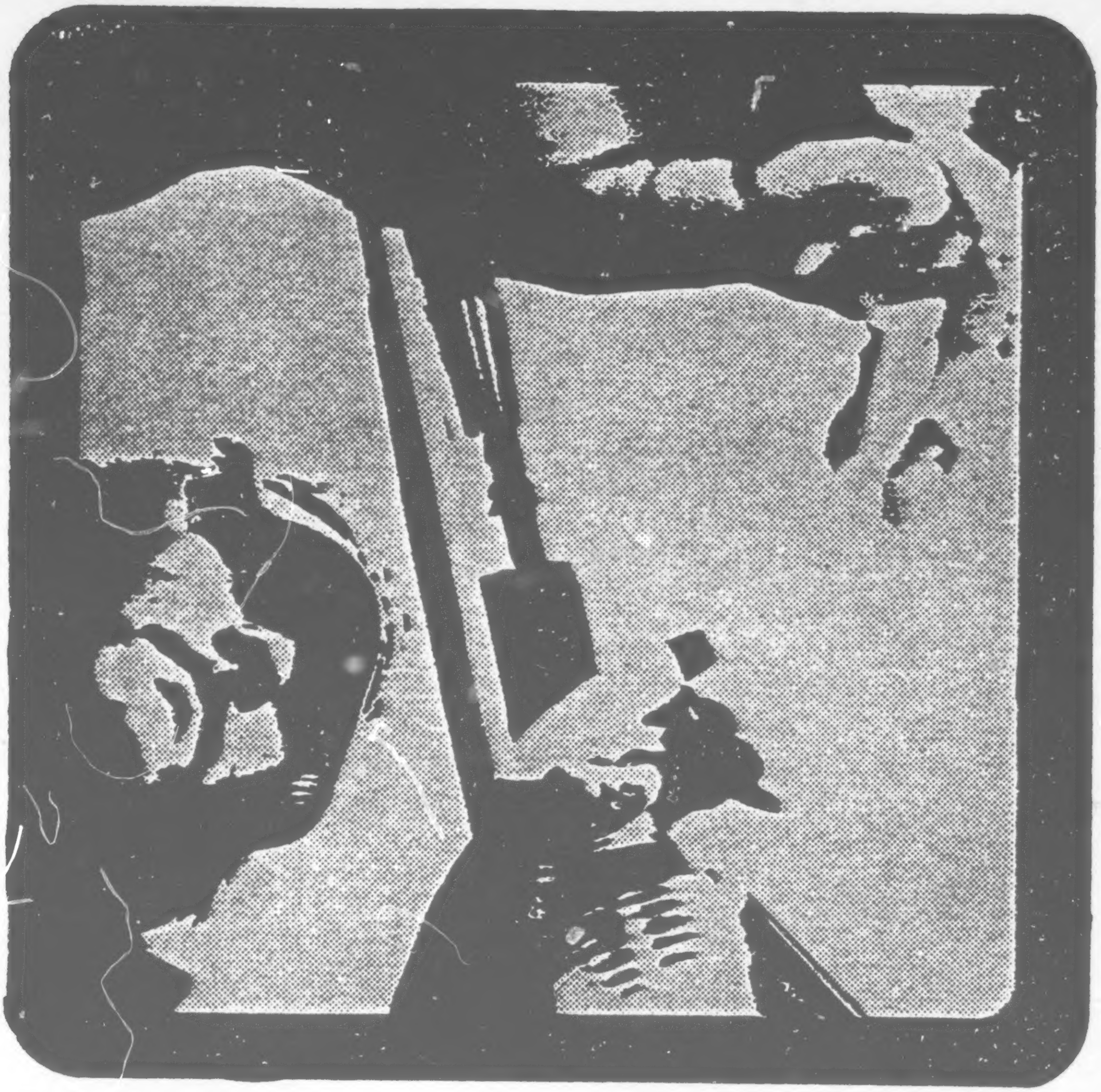
JOB STEPS

7. IF YOU USED SAND TO MELT THE ICE, SWEEP IT UP AFTER THE ICE MELTS.





8. YOU HAVE REMOVED SNOW AND ICE FROM WALKWAYS AND HELPED TO MAKE THIS AREA MUCH SAFER.



building maintenance & engineering

unit: EXTERIOR GROUNDS

capital area career center

module: 2201 07 002 3 date: 5/77 level: ____

skill title: LAWN CARE - SHRUBBERY

developed & written by: DWIGHT SMITH

visuals by: B. DRAPER

WORD GUIDE

PRUNE - REMOVING EXTRA PLANT GROWTH AND SHAPING THE SHRUB.

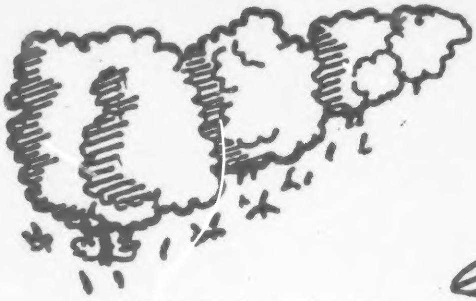
CREOSOTE - A WOOD PRESERVATIVE. IT IS STICKY, OILY AND HAS A STRONG SMELL.

PERFORMANCE OBJECTIVE

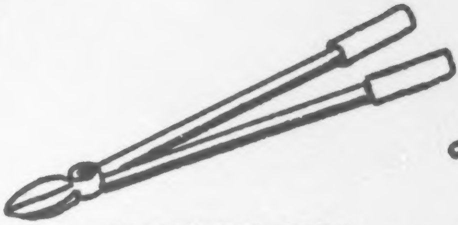
YOU ARE GOING TO LEARN:

HOW TO PRUNE SHRUBS.

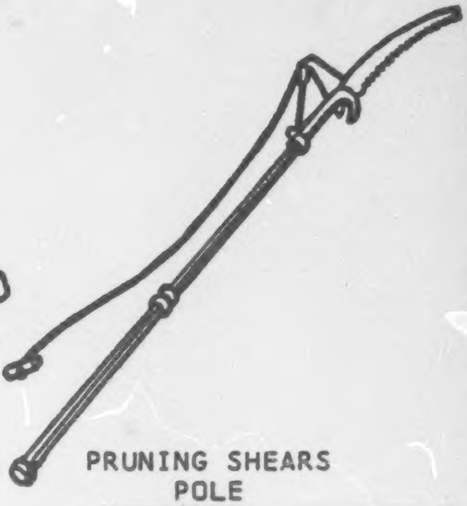
AND IN ORDER TO DO THIS YOU WILL NEED:



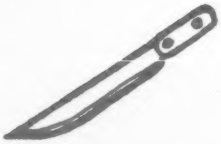
SHRUBS TO PRUNE



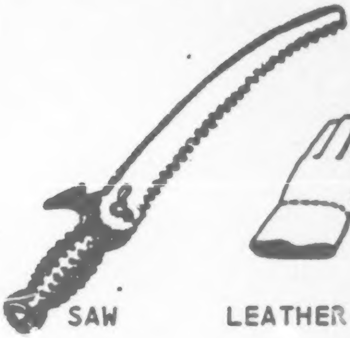
PRUNING SHEARS (LOPPING OR SHEAR CUT)



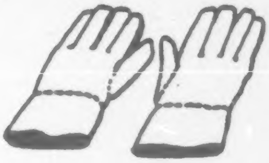
PRUNING SHEARS POLE



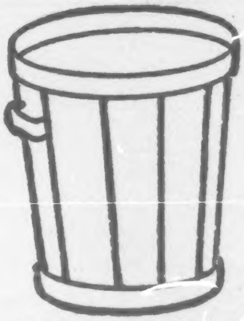
SHARP KNIFE



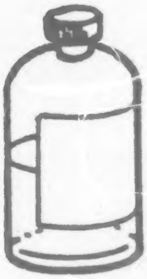
SAW



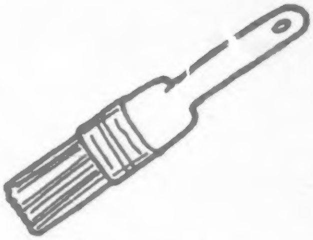
LEATHER GLOVES



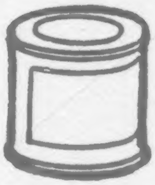
TRASH CONTAINER



ALCOHOL



1" PAINT BRUSH



CREOSOTE OR OTHER COATING

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU PRUNE SHRUBS SO THAT THE NATURAL FORM OF THE SHRUB IS SAVED.
2. YOU HAVE PROPERLY COATED EACH SHRUB

WORD GUIDE

DORMANT - STILL; NOT DOING ANYTHING, SLEEPING.

HORTICULTURIST - A PLANT EXPERT.

INFORMATION

SHRUBS SHOULD BE PRUNED TO KEEP THEM HEALTHY AND PRETTY. EACH SHRUB HAS ITS OWN SPECIAL TIME FOR PRUNING. SHRUBS THAT BLOOM IN THE SPRING SHOULD BE PRUNED RIGHT AFTER THEY BLOOM. PLANTS THAT BLOOM IN THE FALL SHOULD BE PRUNED DURING THE DORMANT SEASON.

IF YOU DO NOT KNOW WHEN TO PRUNE A SHRUB, CALL A HORTICULTURIST.

AFTER YOU USE THE PRUNING SHEARS, CLEAN THEM WITH ALCOHOL. THIS IS TO PREVENT PLANT DISEASE FROM SPREADING.

COAT THE CUT PLANT AREAS WITH CREOSOTE OR ANOTHER COATING TO PREVENT BUGS AND DISEASE FROM GETTING INSIDE THE PLANT.

NOW DO THESE TWO THINGS:

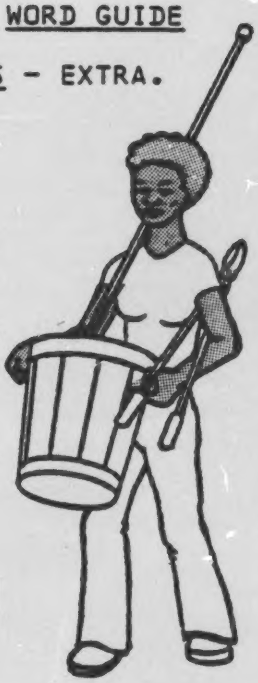
1. LOOK AT YOUR SHRUBS TO SEE WHICH ONES NEED PRUNING.
2. BE SURE IT IS THE RIGHT SEASON TO PRUNE EACH SHRUB. (IF YOU DO NOT KNOW, ASK YOUR LOCAL HORTICULTURIST).

GO ON AND START THE JOB STEPS.

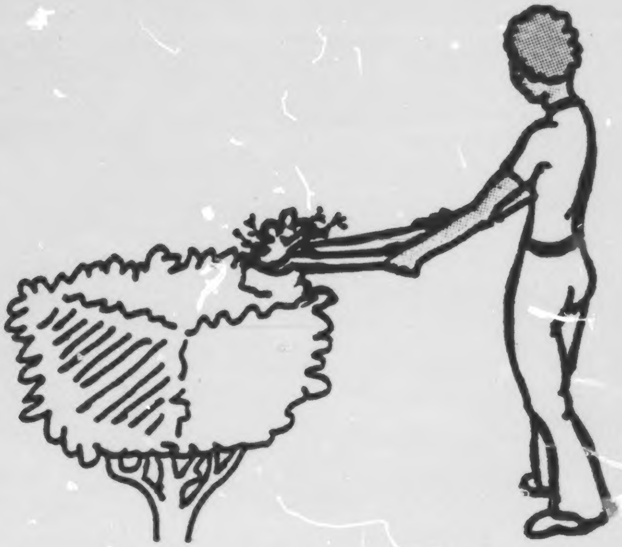
JOB STEPS

WORD GUIDE

SURPLUS - EXTRA.

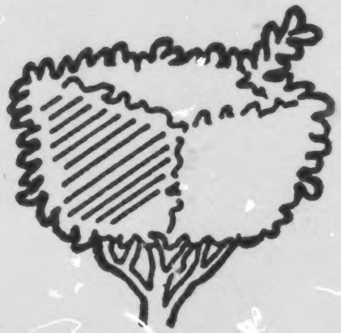


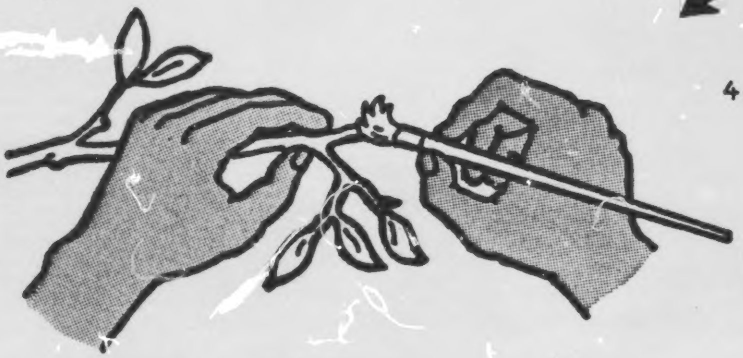
1. GET THE EQUIPMENT LISTED ON PAGE 2 AND GO TO THE WORK AREA.



2. PRUNE OFF ALL DEAD BRANCHES, DYING BRANCHES, AND SURPLUS GROWTH. CUT CLEANLY THROUGH EACH TIME.

3. LOOK AT THE SHAPE OF THE SHRUB. CUT ONLY THE TIPS OF BRANCHES TO EVEN OUT THE SHRUB.

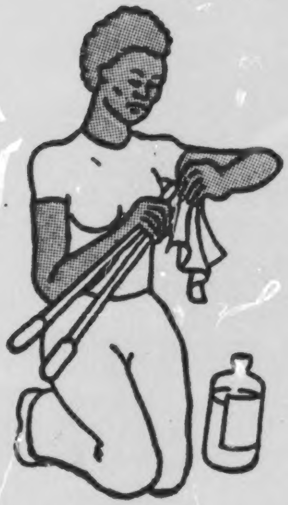


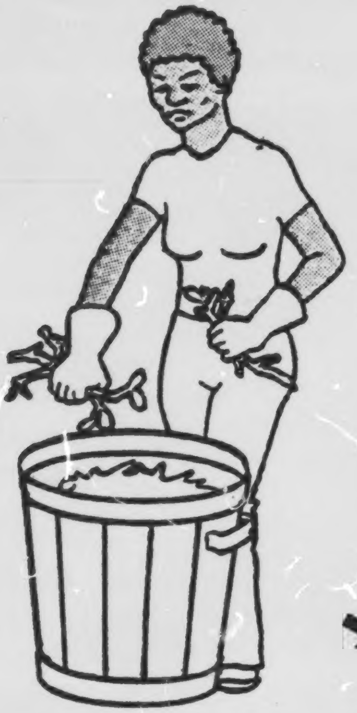


4. COAT EACH CUT WITH CREOSOTE OR OTHER COATING. BE SURE TO GET EVERY CUT.

JOB STEPS

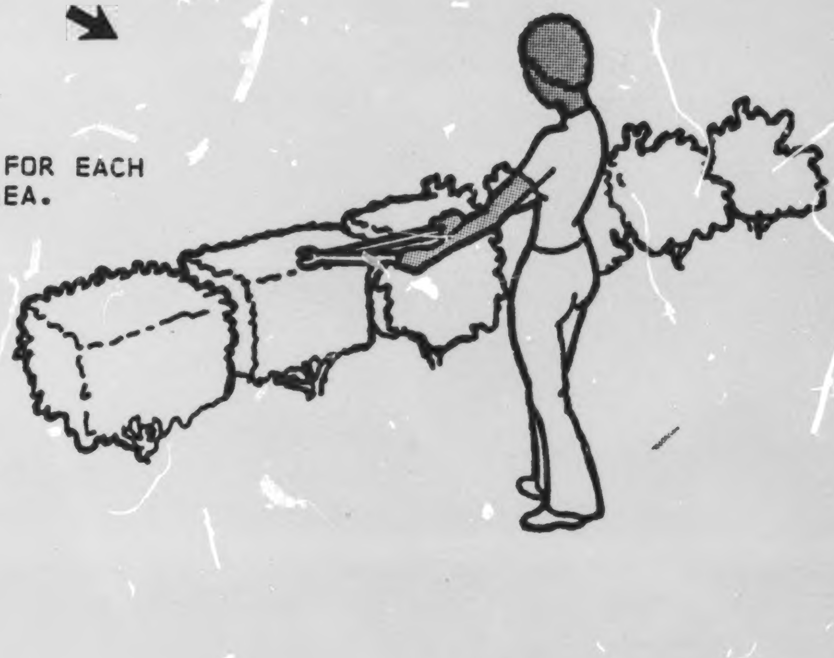
5. BEFORE GOING ON TO THE NEXT SHRUB, CLEAN OFF YOUR CUTTERS.



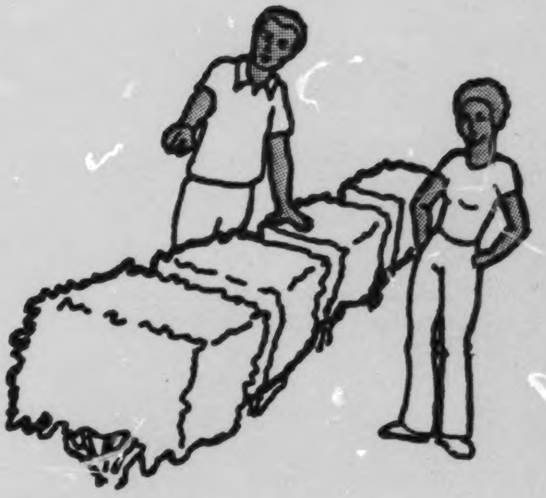


6. PUT ALL THE CUTTINGS IN THE TRASH CONTAINER.

7. REPEAT JOB STEPS 1-5 FOR EACH SHRUB IN YOUR WORK AREA.



JOB STEPS

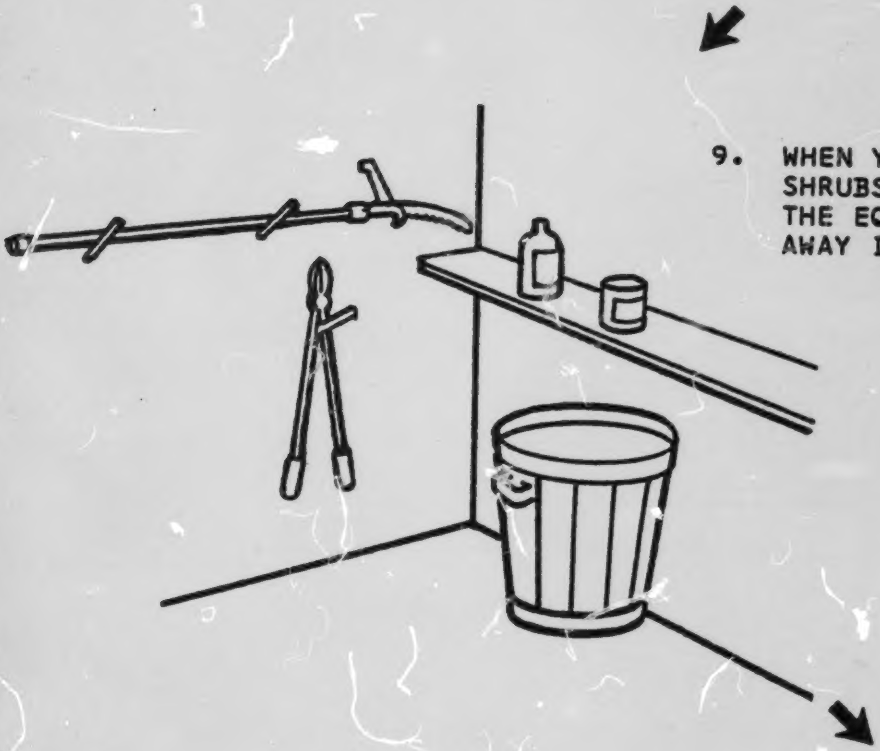


8. ASK YOUR INSTRUCTOR TO CHECK YOUR WORK. YOUR INSTRUCTOR WILL CHECK FOR:

   A. NATURALLY SHAPED SHRUBS.

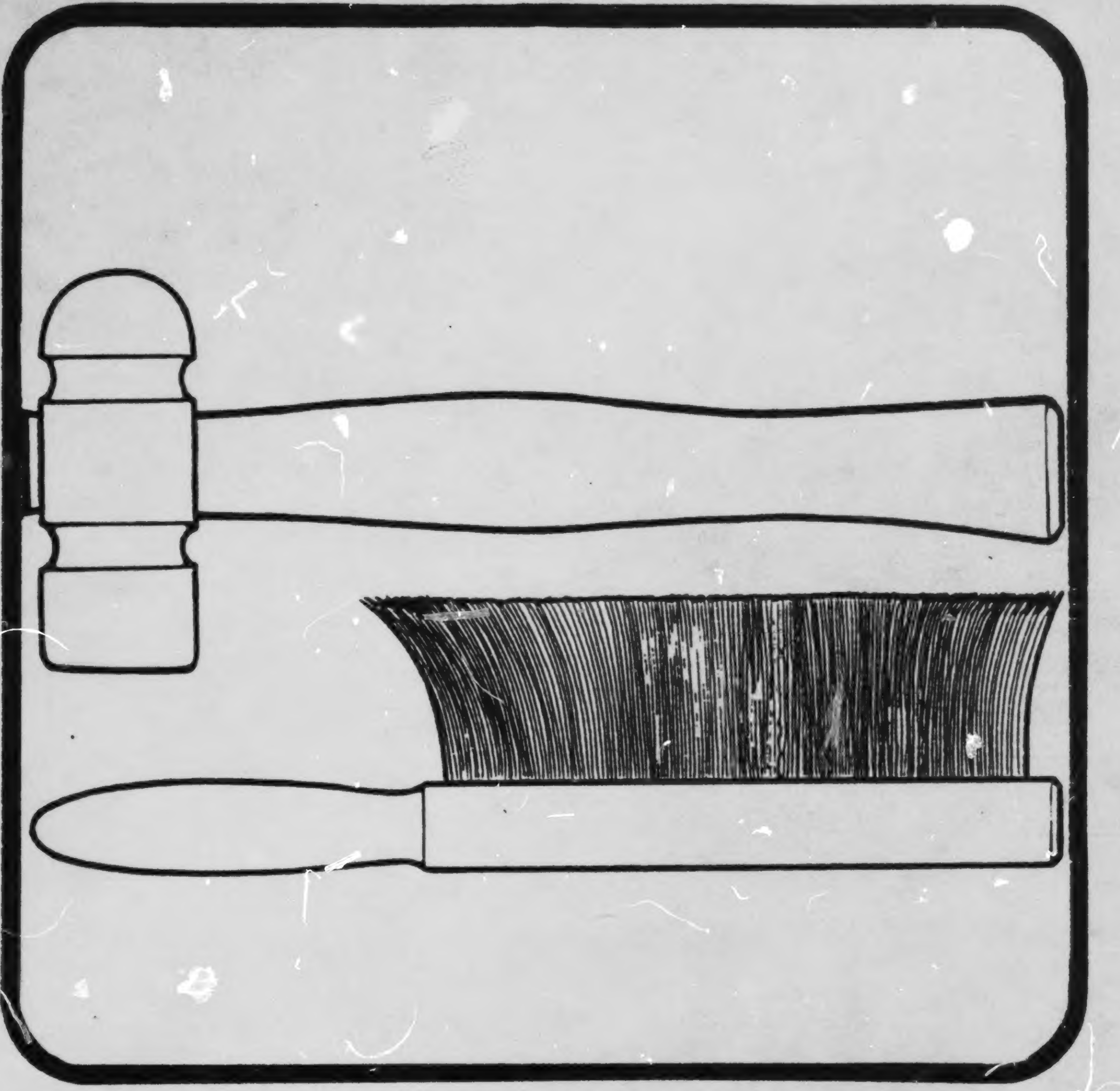
   B. COATED CUTS ON THE SHRUBS.

   C. ALL THE CUTTINGS IN THE TRASH.



9. WHEN YOU HAVE PRUNED ALL THE SHRUBS THAT NEED PRUNING, PUT THE EQUIPMENT AND SUPPLIES AWAY IN THE RIGHT PLACE.

10. GOOD WORK. BECAUSE OF YOU, THESE SHRUBS WILL LOOK BETTER NEXT YEAR.



building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 010 3 date: AUGUST 1977 level:

skill title: OPERATION OF SMALL LAWN TRACTORS

developed & written by: ALAN STEINBERG

visuals by: MARY ANN GAMEL

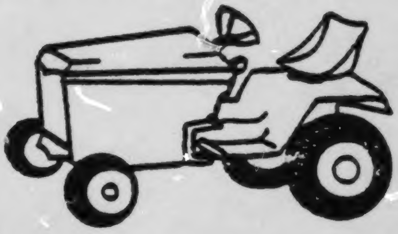
PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE A SMALL LAWN TRACTOR.

IN ORDER TO DO THIS YOU WILL NEED:

A SMALL LAWN TRACTOR



WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN SAFELY START AND USE THE SMALL LAWN TRACTOR.

WORD GUIDE

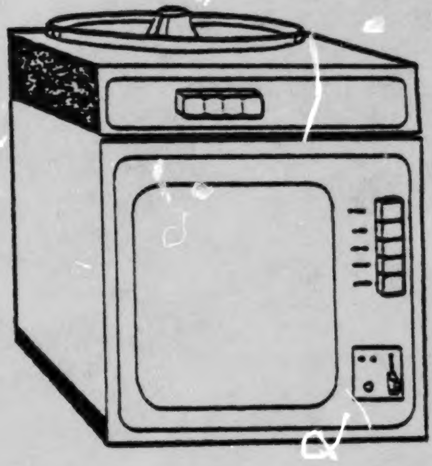
THROTTLE - CONTROLS TRACTOR SPEED.

SHIFT LEVER - CONTROLS USE OF GEARS.

NEUTRAL - MIDDLE GEAR; WHEN ENGINE RUNS, TRACTOR IS NOT IN ANY FORWARD OR BACKWARD GEAR.

CHOKE - CONTROLS FLOW OF GAS TO ENGINE.

JOB STEPS

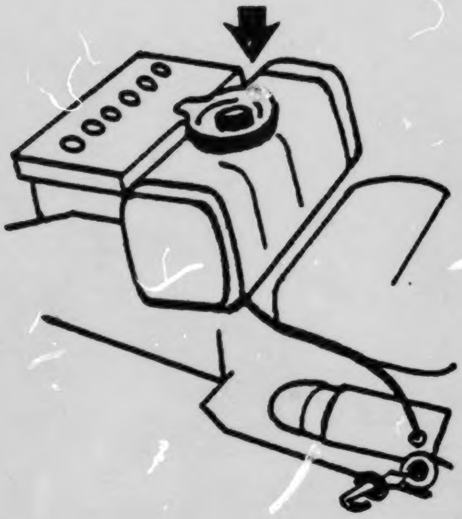


BEFORE YOU DO THE JOB STEPS, WATCH THE SLIDE TAPE ON THE OPERATION OF A SMALL LAWN TRACTOR.

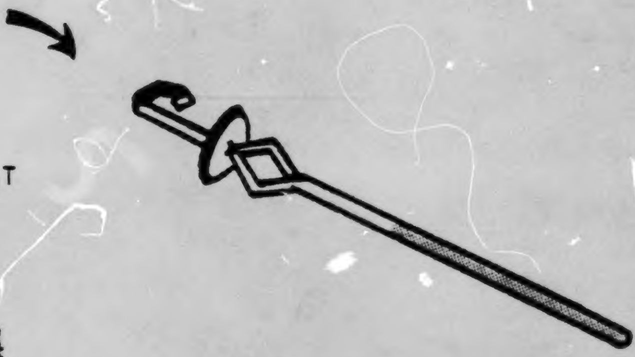
CAUTION: READ THIS WHOLE MODULE BEFORE STARTING TRACTOR.

LEARN WHERE TO FIND YOUR EMERGENCY BRAKE (LEFT PEDAL).

AT YOUR WORK AREA:



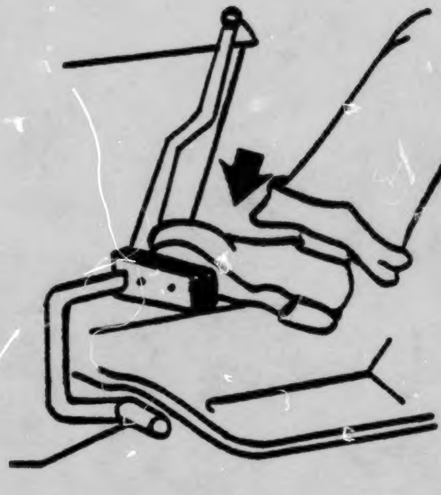
1. FILL THE GAS TANK WITH GASOLINE, IF NEEDED. THE TANK IS ON THE FRONT OF THE TRACOTR HOOD.

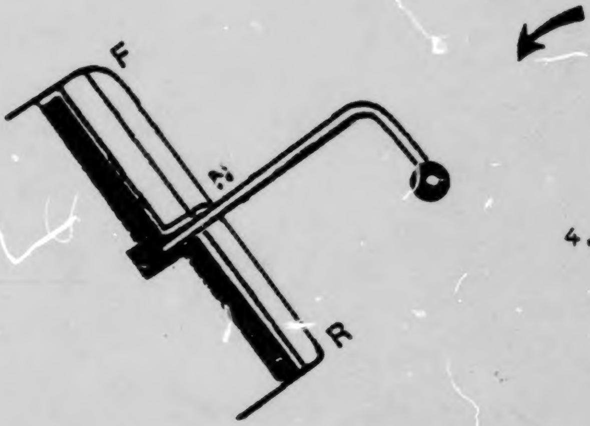


2. CHECK THE OIL AND ADD THE RIGHT AMOUNT, IF ANY IS NEEDED.

JOB STEPS

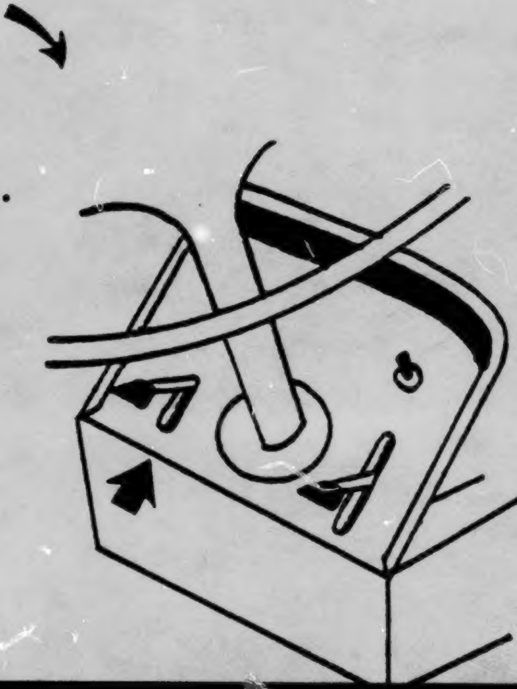
3. SITTING IN TRACOTR SEAT, PUSH DOWN PEDAL ON LEFT SIDE WITH YOUR LEFT FOOT.





4. CHECK TO BE SURE THAT THE SHIFT LEVER - BETWEEN YOUR RIGHT LEG AND THE TRACTOR - IS IN THE "N" OR NEUTRAL SLOT.

5. LIFT CHOKE LEVER ALL THE WAY UP.



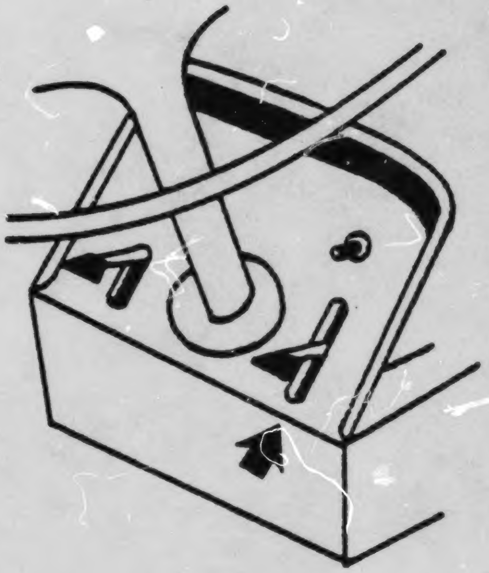
WORD GUIDE

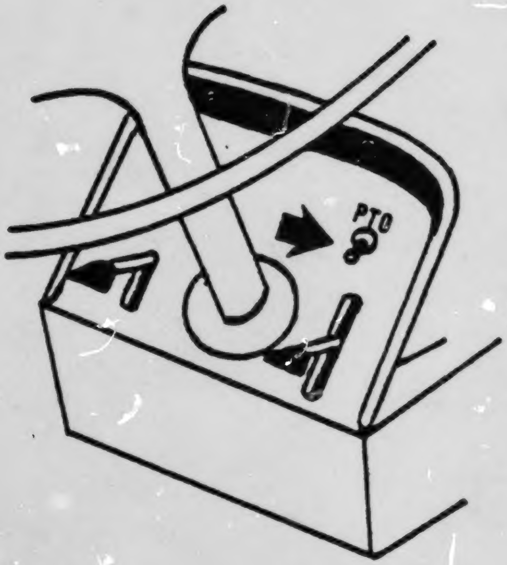
P.T.O. - RUNS TRACTOR EXTRAS, LIKE MOWER AND SNOW BLOWERS.

CLOCKWISE - TO THE RIGHT.

JOB STEPS

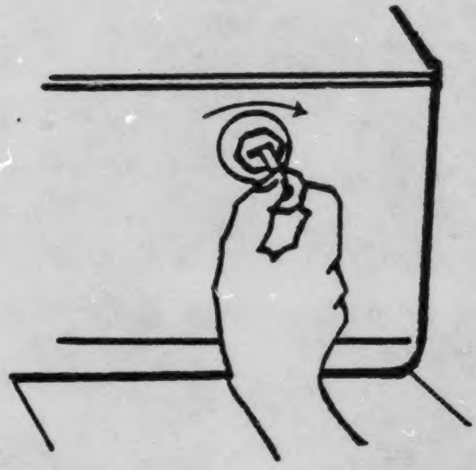
6. LIFT THROTTLE LEVER HALFWAY UP ON THE SLOT.





7. PUSH DOWN THE P.T.O. (POWER TAKE OFF) SWITCH. THE SWITCH IS ABOVE THE THROTTLE LEVER.

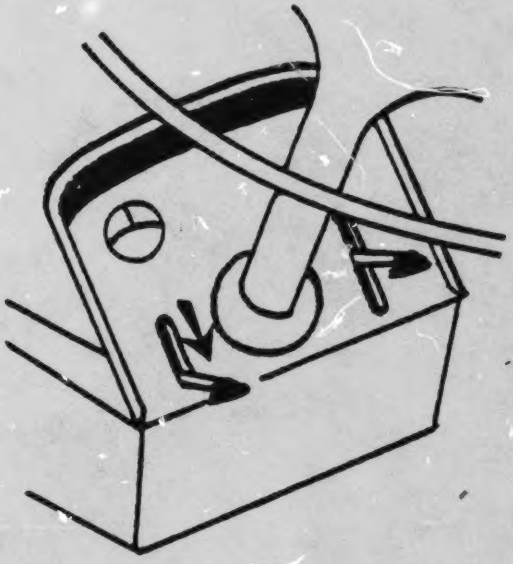
8. TURN KEY CLOCKWISE UNTIL ENGINE STARTS. WHEN IT DOES, QUICKLY LET GO OF KEY.

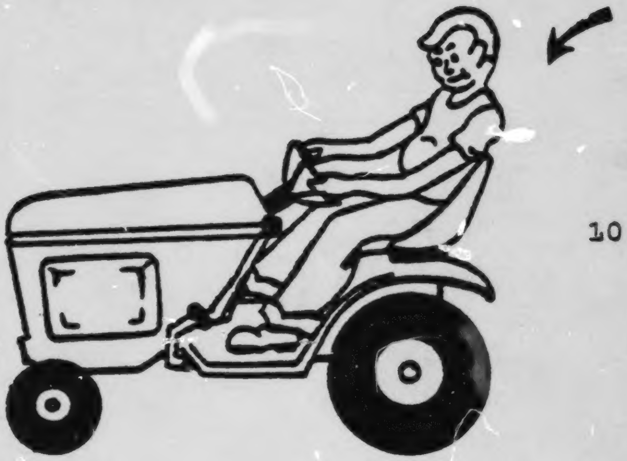


JOB STEPS

9. PUSH DOWN CHOKE LEVER.

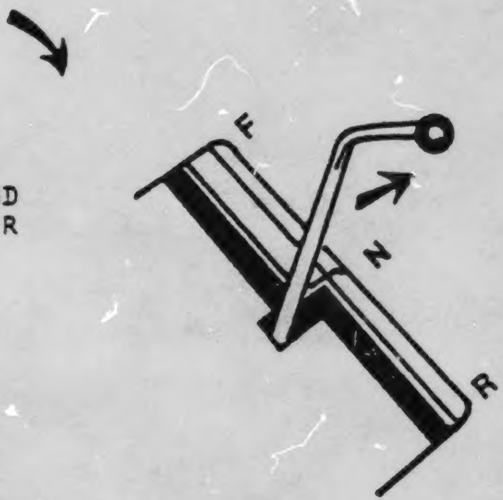
NOTE: IF ENGINE IS NOT RUNNING, DO JOB STEPS 3-9 AGAIN.



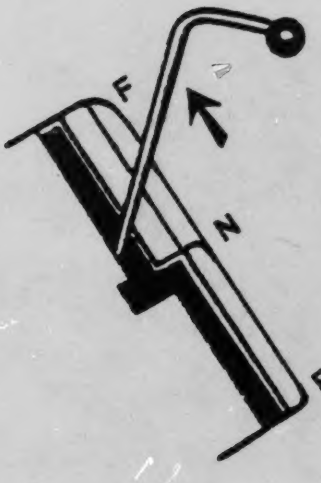


10. LET ENGINE WARM-UP FOR 2 OR 3 MINUTES.

11. PUT YOUR RIGHT HAND ON SHIFT LEVER BETWEEN YOUR RIGHT LEG AND TRACTOR. THEN, MOVE SHIFT LEVER OUT TO YOUR RIGHT.

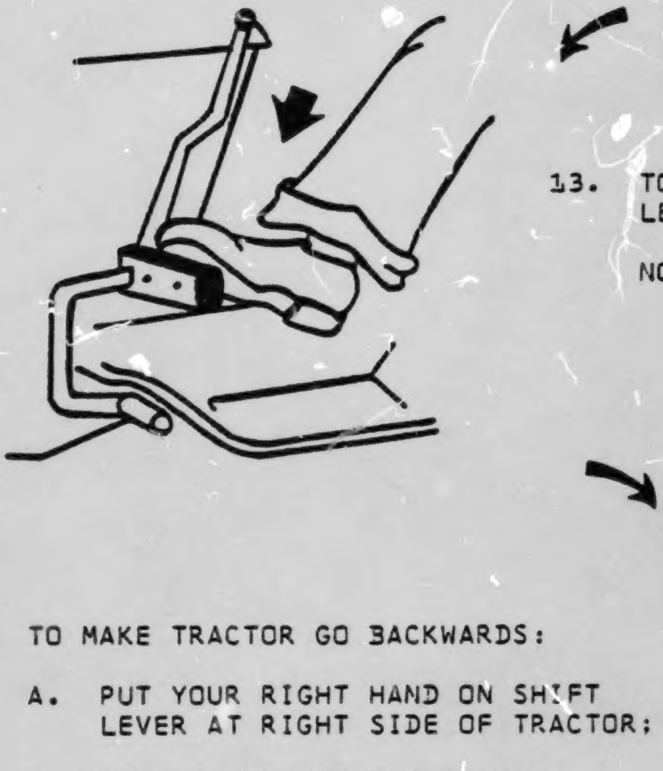


JOB STEPS



12. SLOWLY PUSH THE SHIFT LEVER TOWARD THE FRONT OF TRACTOR; YOU SHOULD NOW BE MOVING.

    NOTE: TO MOVE FASTER, PUSH SHIFT LEVER MORE TOWARD FRONT OF TRACTOR.



13. TO STOP TRACTOR, PUSH DOWN ON LEFT PEDAL.

    NOTE: USE THIS PEDAL WHENEVER YOU HAVE PROBLEMS DRIVING OR NEED TO SHIFT FROM FORWARD TO REVERSE.

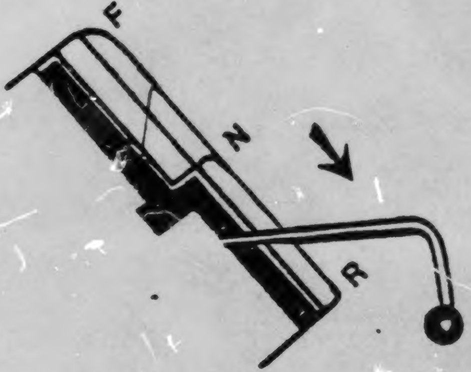
14. TO MAKE TRACTOR GO BACKWARDS:

    A. PUT YOUR RIGHT HAND ON SHIFT LEVER AT RIGHT SIDE OF TRACTOR;

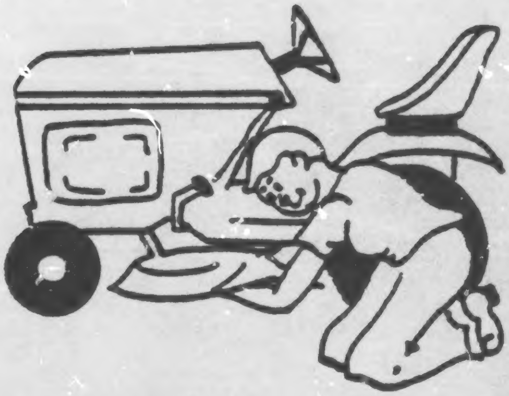
    B. PUSH DOWN THE LEFT PEDAL;

    C. PUSH SHIFT LEVER DOWN AND PULL BACK.

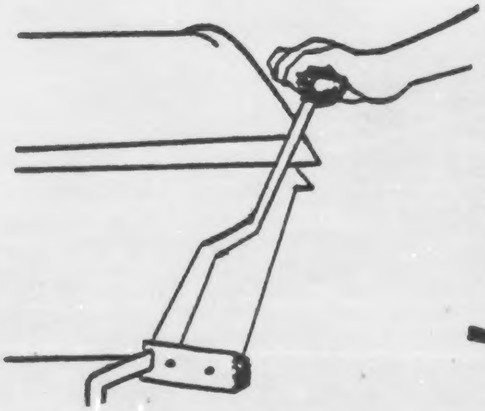
    NOTE: JOB STEPS 15-22 TELL YOU HOW TO USE THE MOWER UNDERNEATH THE TRACTOR.



JOB STEPS



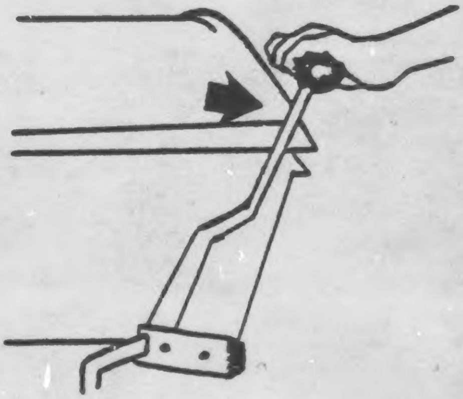
15. WITH MOTOR OFF, CHECK MOWER BLADES FOR SHARPNESS.



16. START MOTOR. THEN, PUT YOUR LEFT HAND ON LEVER BETWEEN YOUR LEFT LEG AND TRACTOR.

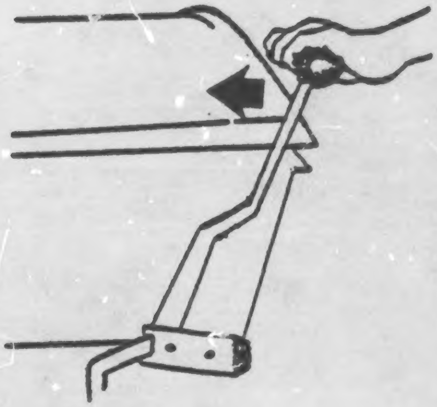
17. PULL BACK; MOWER WILL THEN DROP DOWN.

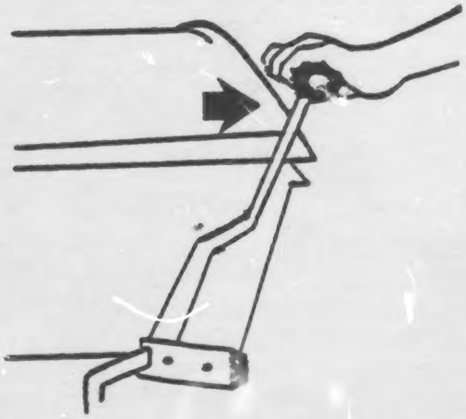
NOTE: DO NOT TURN ON MOWER BLADES UNLESS MOWER IS DOWN.



JOB STEPS

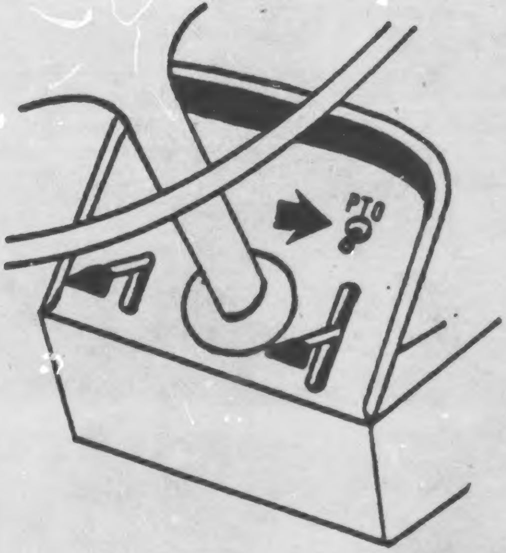
18. PUSH LEVER FORWARD, TOWARD THE FRONT OF TRACTOR. THIS WILL LIFT UP THE MOWER.





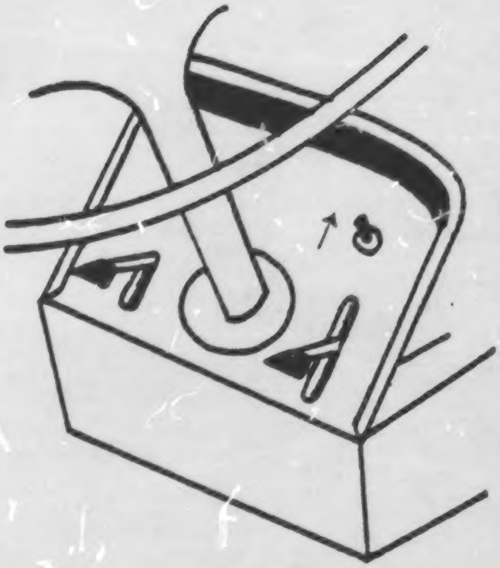
19. PULL BACK THE LEFT LEVER.

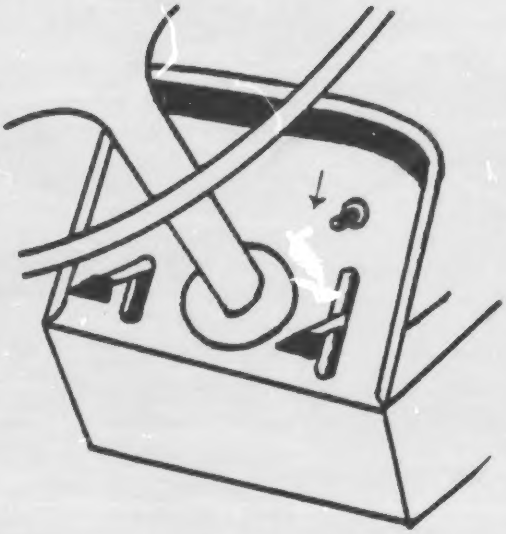
20. PULL BACK SWITCH ABOVE THROTTLE LEVER (P.T.O. SWITCH).



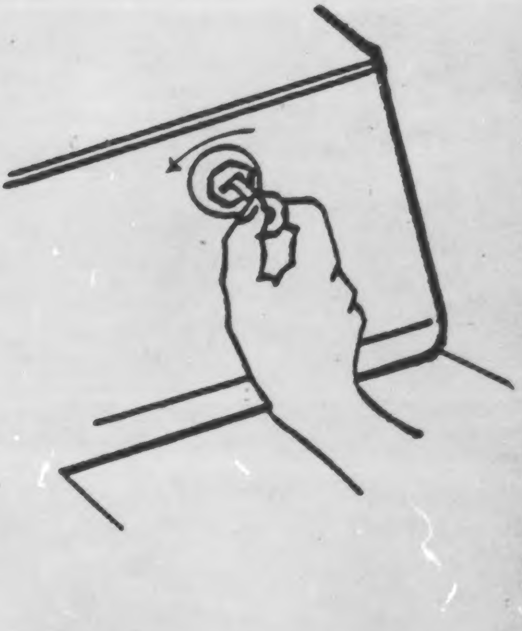
JOB STEPS

21. LIFT UP THIS SWITCH: THE MOWER BLADES ARE NOW TURNING, SO BE CAREFUL.





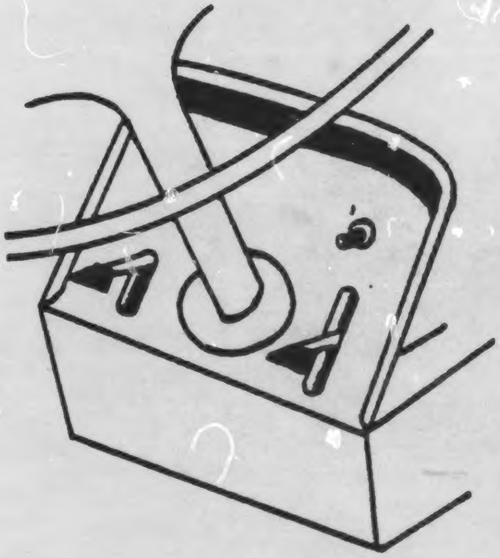
22. TO STOP THE TURNING BLADES, PUSH DOWN THE SWITCH.

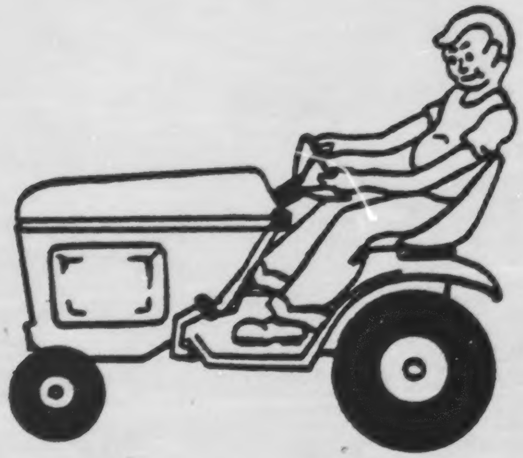


23. TO STOP THE TRACTOR, TURN THE KEY TO THE LEFT. IT WILL THEN BE STRAIGHT UP AND DOWN.

JOB STEPS

24. DO ALL JOB STEPS AGAIN.



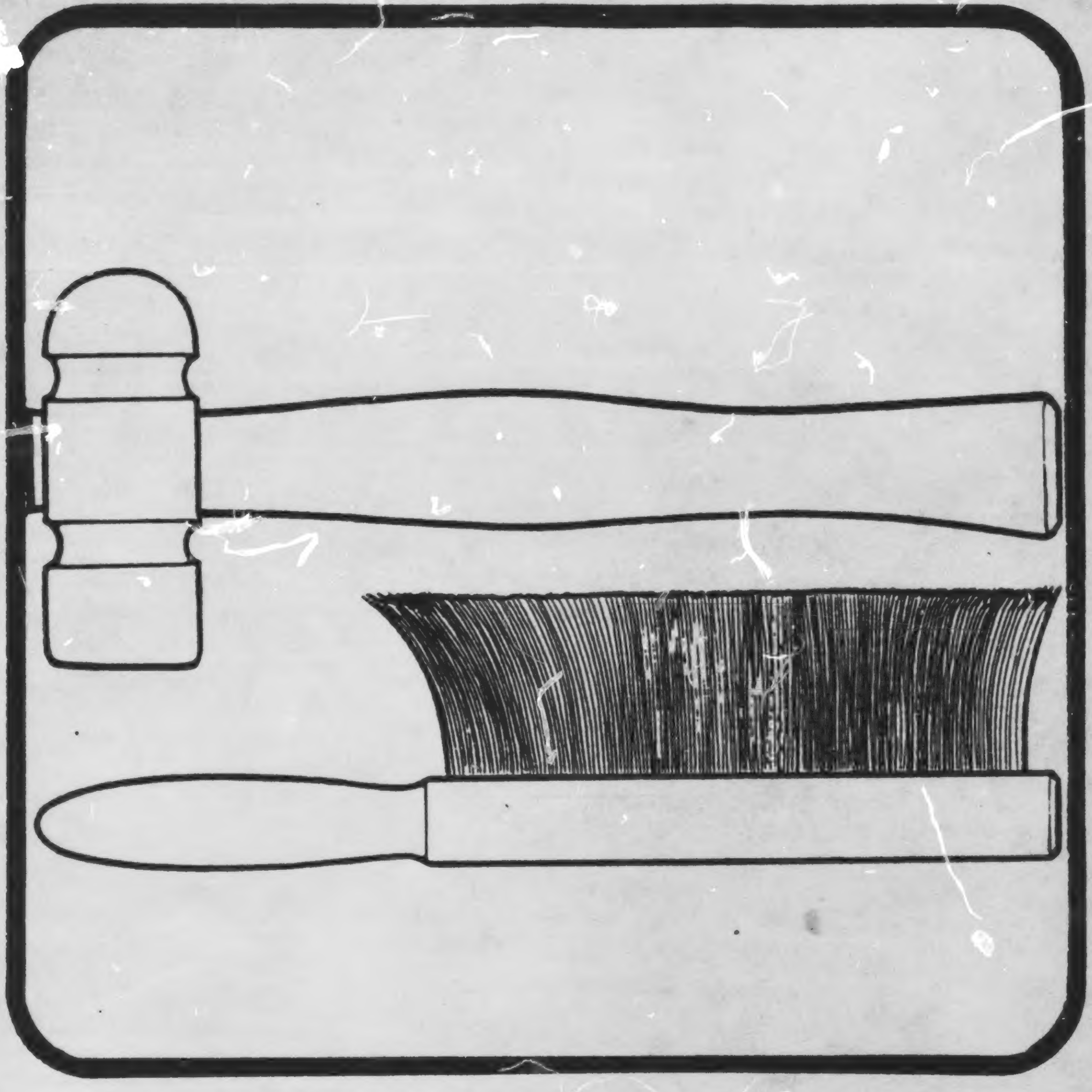


25. IF YOU DO NOT YET FEEL SAFE DRIVING THIS TRACTOR, DRIVE IT AROUND THE LAWN OR PARKING LOT UNTIL YOU FEEL SAFER. BE SURE TO:

A. GO FORWARD AND BACKWARD.

B. RAISE AND LOWER THE MOWER.

C. TURN BLADES ON AND OFF.



building maintenance & engineering

unit: LAWN CARE - GENERAL MAINTENANCE

capital area career center

module: 2201 07 011 3 **date:** AUGUST 1977 **level:**

skill title: MOWING - POWER DRIVEN HAND MOWER

developed & written by: ALAN STEINBERG

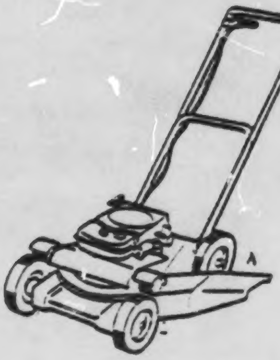
visuals by: DAVE BROWN AND BILL DRAPER

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

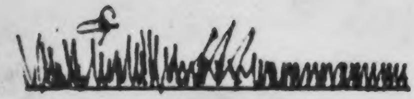
HOW TO MOW A LAWN USING A POWER-DRIVEN HAND MOWER.

IN ORDER TO DO THIS YOU WILL NEED:



POWER-DRIVEN HAND MOWER

GASOLINE



LAWN

OIL

HOSE

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE COMPLETED THE JOB STEPS AND SAFELY AND CORRECTLY MOWED A LAWN WITH THE POWER-DRIVEN HAND MOWER.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

MOWER BASE - THE PART ON WHICH THE ENGINE SITS.

REMOVE - TAKE OFF OR AWAY.

INFORMATION

WHAT IS A POWER-DRIVEN HAND MOWER?

IT IS THE SAME AS A PUSH-TYPE LAWN MOWER EXCEPT THAT IT HAS A MOTOR WHICH HELPS PUSH THE MOWER FORWARD WITH LESS WORK.

WHAT ARE SOME THINGS TO REMEMBER WHEN MOWING?

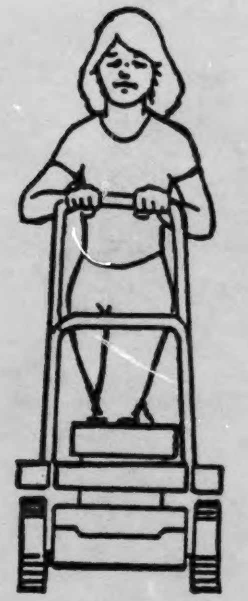
1. MOW GRASS WHEN IT GETS 2 1/2 - 3" HIGH
2. DO NOT MOW WHEN THE GRASS IS WET.
3. KEEP YOUR HANDS AND FEET AWAY FROM THE MOWER BASE WHEN MOWER IS RUNNING.
4. REMOVE STONES, GLASS, AND PIECES OF WOOD, ETC. BEFORE MOWING.
5. BE CAREFUL AROUND FLOWERS AND SHRUBS (TRY NOT TO MOW THEM).
6. DO NOT CUT THE GRASS TOO SHORT; USUALLY 1 1/2 - 2" IS OKAY.
7. CLEAN UP SIDEWALKS AND THE MOWER WHEN FINISHED.

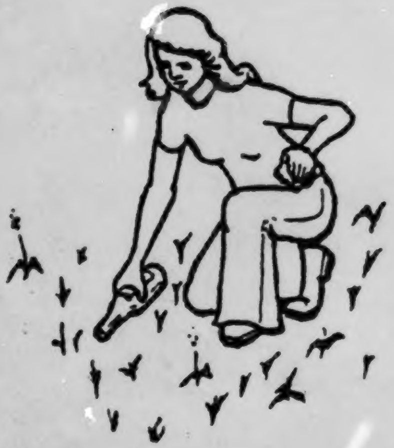
WORD GUIDE

CHUTE - METAL DEVICE OUT OF WHICH COMES THE JUST-CUT GRASS.

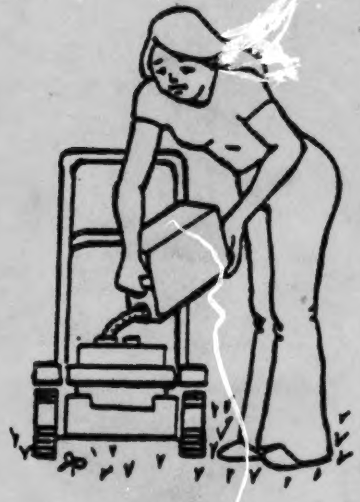
JOB STEPS

1. TAKE ALL EQUIPMENT AND SUPPLIES TO YOUR WORK AREA.

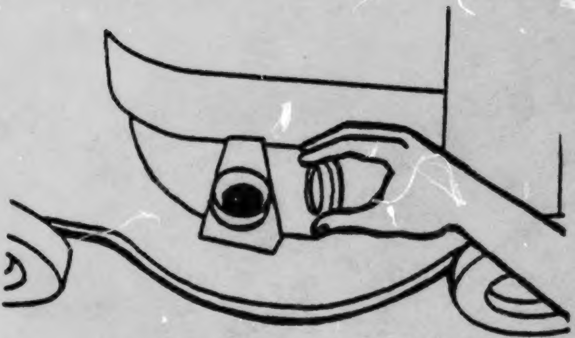




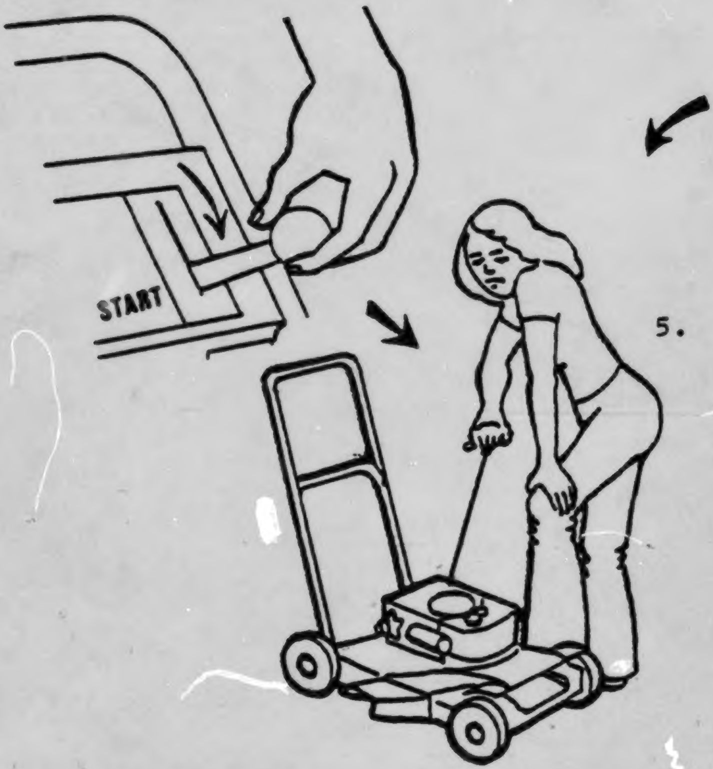
2. CHECK LAWN FOR, AND PICK UP, WIRE, STONES, GLASS, WOOD, ETC. BEFORE MOWING.



3. BEFORE STARTING MOWER, FILL GAS TANK WITH GASOLINE. BE CAREFUL NOT TO SPILL ANY ON THE LAWN.

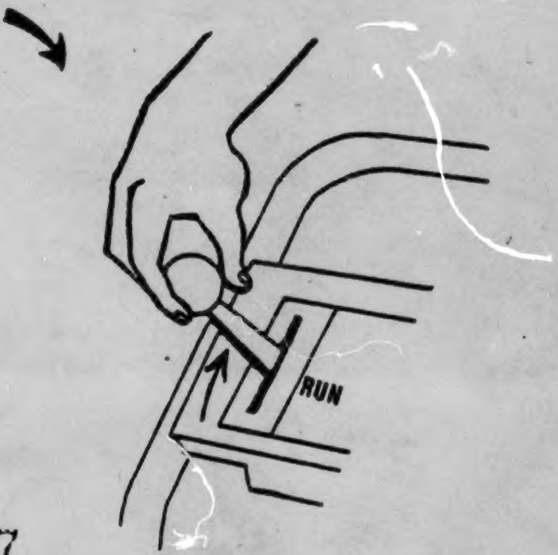


4. CHECK OIL LEVEL ON THE MOWER BASE OF ENGINE. IF IT IS NOT FULL, ADD THE RIGHT AMOUNT.

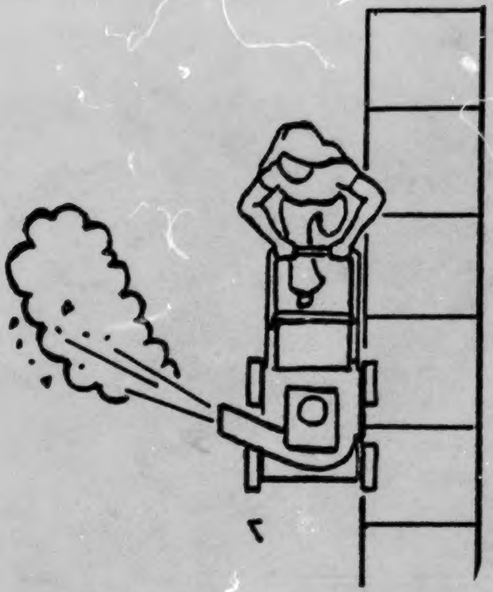


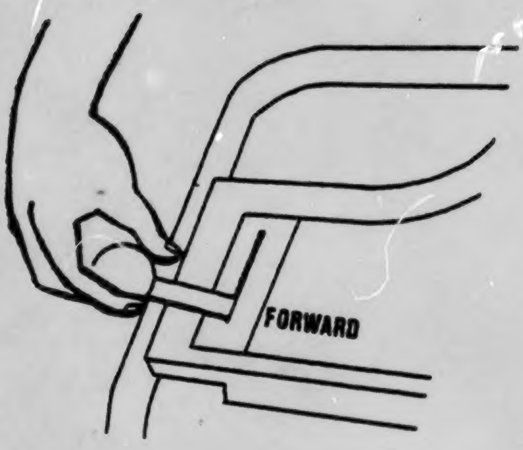
5. MOVE THE LEVER ON THE MOWER HANDLE TO "START". THEN, PUT YOUR FOOT ON THE MOWER BASE AND PULL THE ROPE. AFTER THE ENGINE STARTS, LET GO OF THE ROPE.

6. MOVE THE LEVER ON THE HANDLE TO "RUN".

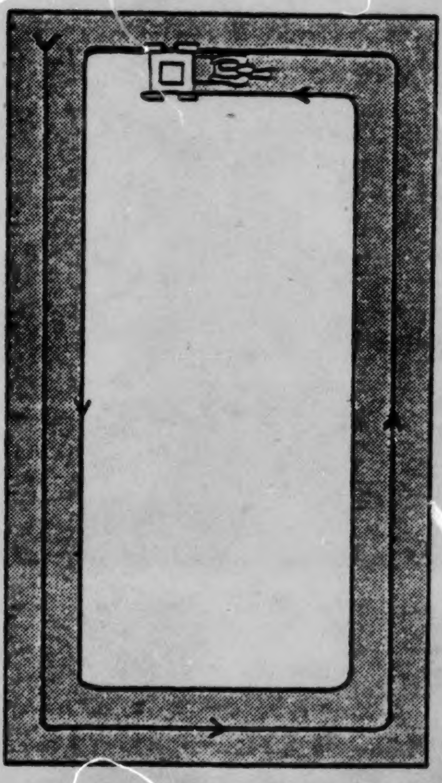


7. PLACE THE MOWER SO THE CHUTE WILL THROW CUT GRASS ON THE LAWN, NOT ON THE SIDEWALK.





8. PUSH THE DRIVE LEVER ON THE HANDLE "FORWARD" SO THE MOWER WILL MOVE.

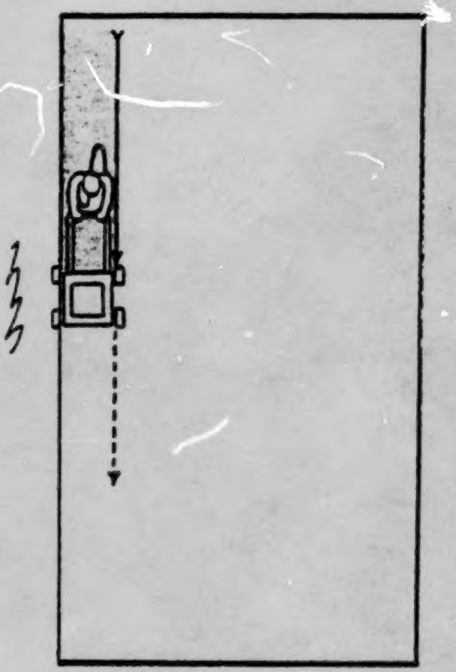


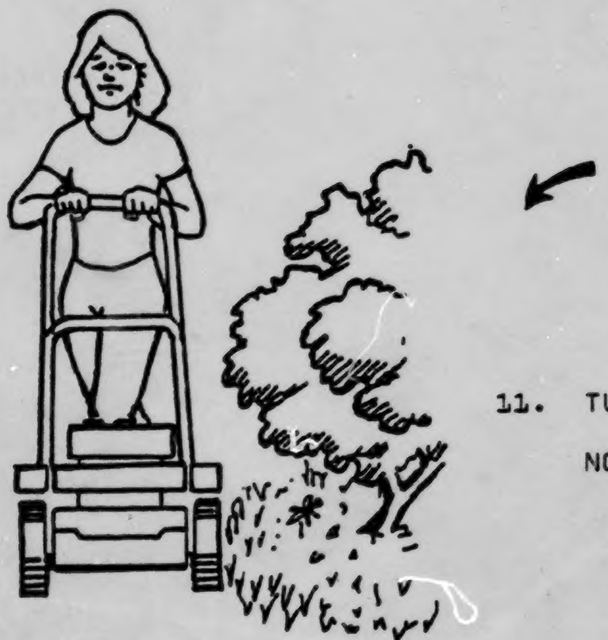
9. MOVE AROUND LAWN TWO TIMES YOU CAN TURN AROUND IN THE SPACE YOU JUST MOWED.

JOB STEPS

10. STARTING IN ONE CORNER, MOW IN A STRAIGHT LINE BACK AND FORTH.

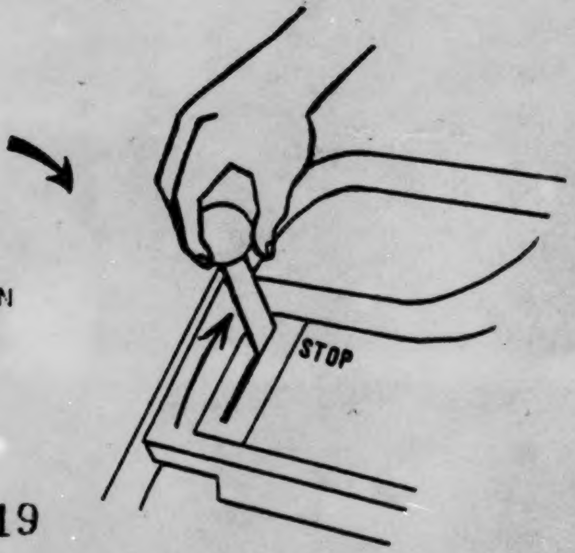
NOTE: BE SURE TO RUN THE FRONT WHEEL ON THE WHEEL MARK MAKE FROM THE LAST MOWING RUN.





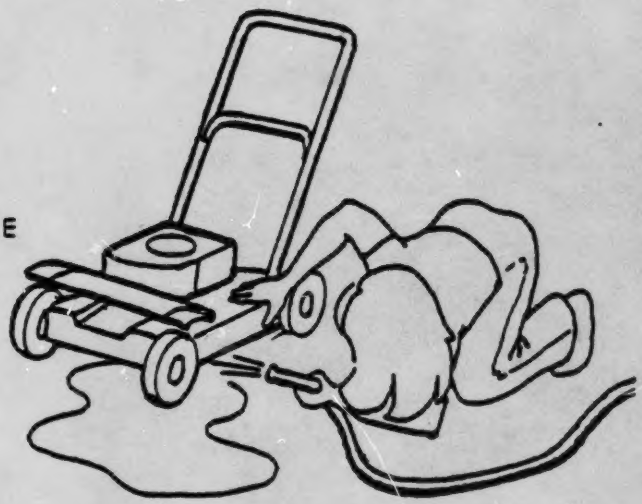
11. TURN AROUND AND COME BACK.

NOTE: WATCH FOR FLOWERS AND SHRUBS.



12. WHEN FINISHED, MOVE THE LEVER ON THE HANDLE TO "STOP".

13. WASH MOWER WITH A HOSE. BE SURE TO ALSO WASH UNDER THE MOWER. THEN, PUT AWAY MOWER, GASOLINE, AND OIL.



building maintenance & engineering

unit: LAWN CARE - GROUNDS

capital area career center

module: 2201 07 012 3 date: 3/20/77 level: I

skill title: MOWING WITH A SMALL LAWN TRACTOR

developed & written by: ALAN STEINBERG

visuals by:

WORD GUIDE

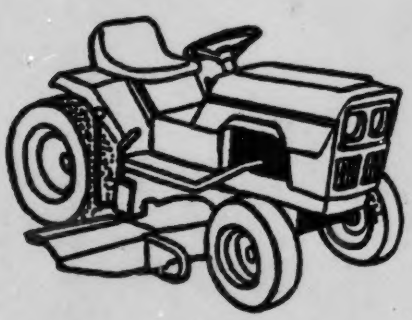
CHUTE - PLACE ON TRACTOR WHERE CLIPPINGS COME OUT

PERFORMANCE OBJECTIVE

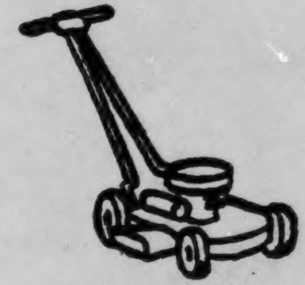
WHAT YOU ARE GOING TO LEARN:

HOW TO MOW GRASS WITH A SMALL LAWN TRACTOR.

AND IN ORDER TO DO THIS YOU WILL NEED:



A SMALL LAWN TRACTOR (WITH CHUTE)



A POWER HAND-MOWER

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE MOWED THE LAWN SAFELY, CUT THE GRASS EVENLY AND PICKED UP ALL WIRES, GLASS AND STONES.

INFORMATION

YOU USE A TRACTOR TO MOW LARGE AREAS TO SAVE TIME AND WORK.

IF YOU COMPLETE MODULE 2201 07 010 3, YOU WILL KNOW HOW TO SAFELY USE A LAWN TRACTOR.

YOU SHOULD USE A POWER HAND-MOWER TO CUT GRASS AROUND TREES, FLOWERS AND SHRUBS. IF YOU COMPLETE MODULE 2201 07 011 3, YOU WILL KNOW HOW TO SAFELY USE A POWER HAND-MOWER.

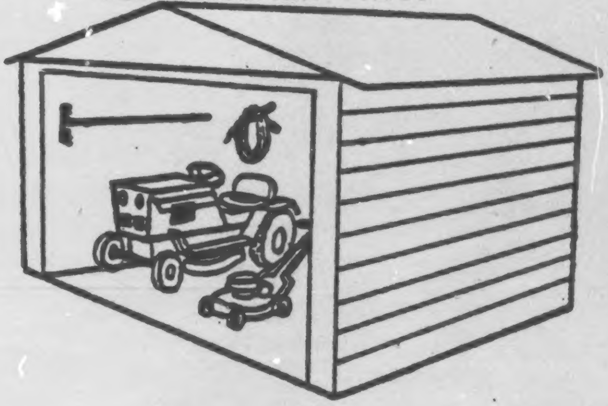
NOTE: DO NOT MOW WHEN GRASS IS WET.

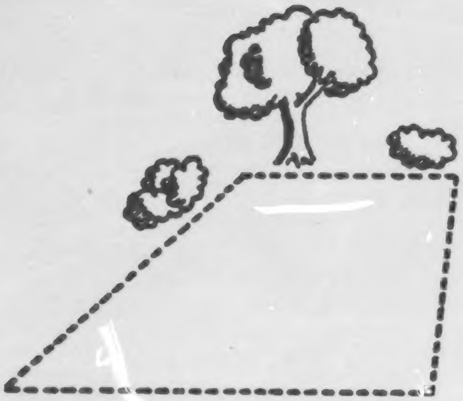
WORD GUIDE

CHUTE - A SLOPED ATTACHMENT THROUGH WHICH THINGS LIKE GRASS CLIPPINGS MAY PASS.

JOB STEPS

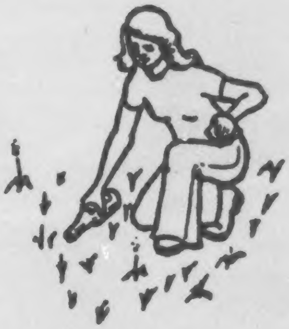
1. GET THE SMALL LAWN TRACTOR AND POWER HAND-MOWER.

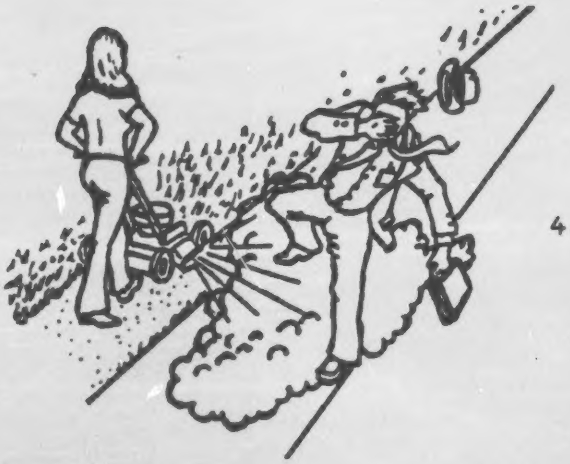




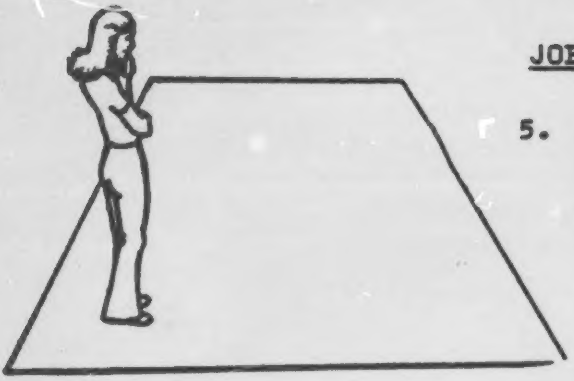
2. TAKE THEM TO AREA WHERE YOU WILL WORK.

3. PICK UP ALL WIRES, GLASS AND STONES.



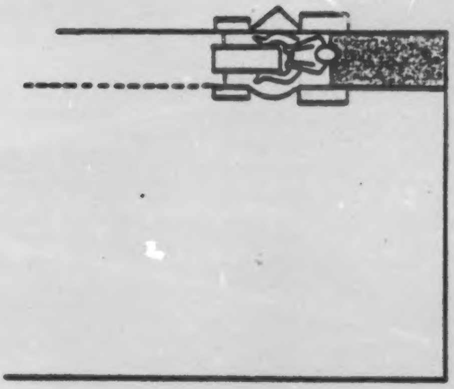


4. POINT TRACTOR SO THAT THE CHUTE DOES NOT BLOW CLIPPINGS ON THE SIDEWALK OR BUILDING.

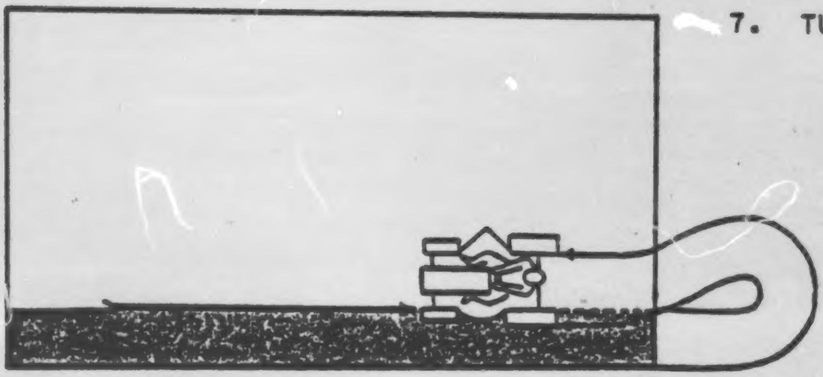


JOB STEPS

5. LOOK OVER THE AREA AND DECIDE WHICH IS THE LONG DIRECTION. YOU WILL MOW IN THAT DIRECTION, BACK AND FORTH.



6. START AT ONE CORNER AND CUT IN A STRAIGHT LINE TO THE OPPOSITE CORNER.

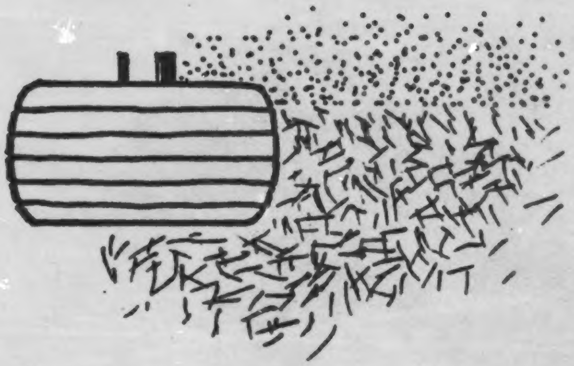


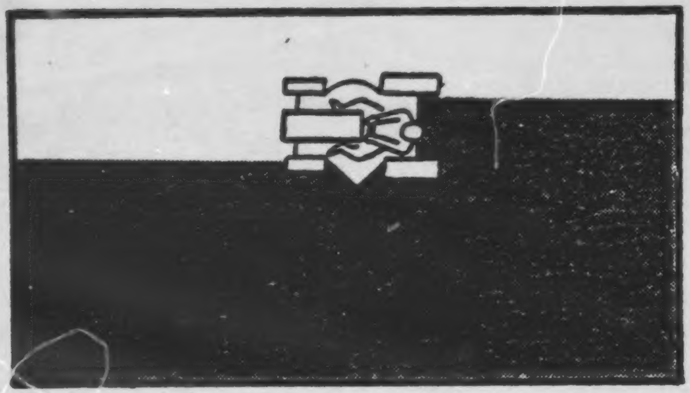
7. TURN AROUND.

8. LINE UP THE FRONT WHEEL SO THAT IT RUNS IN THE TRACKS YOU MADE ON FIRST STRAIGHT CUT.

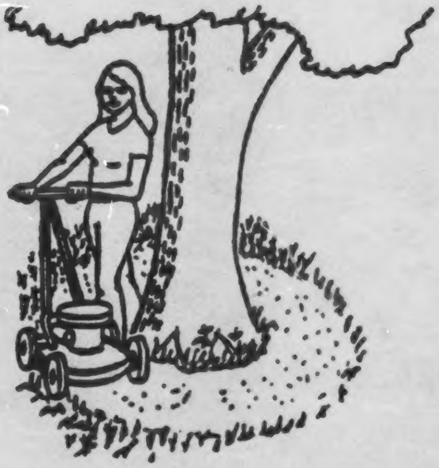
JOB STEPS

9. WHEN YOU GET TO THE END OF A ROW, TURN AROUND AND LINE UP THE FRONT WHEEL WITH THE WHEEL TRACK FROM THE LAST CUT.

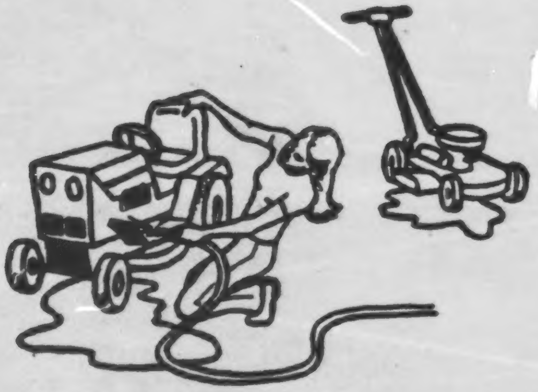




10. DO THE WHOLE AREA THIS WAY.



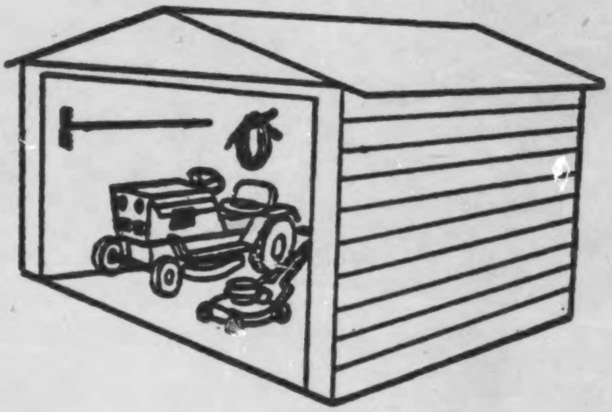
11. NOW TAKE THE POWER HAND-MOWER AND MOW AROUND TRESS, FLOWERS AND SHRUBS.

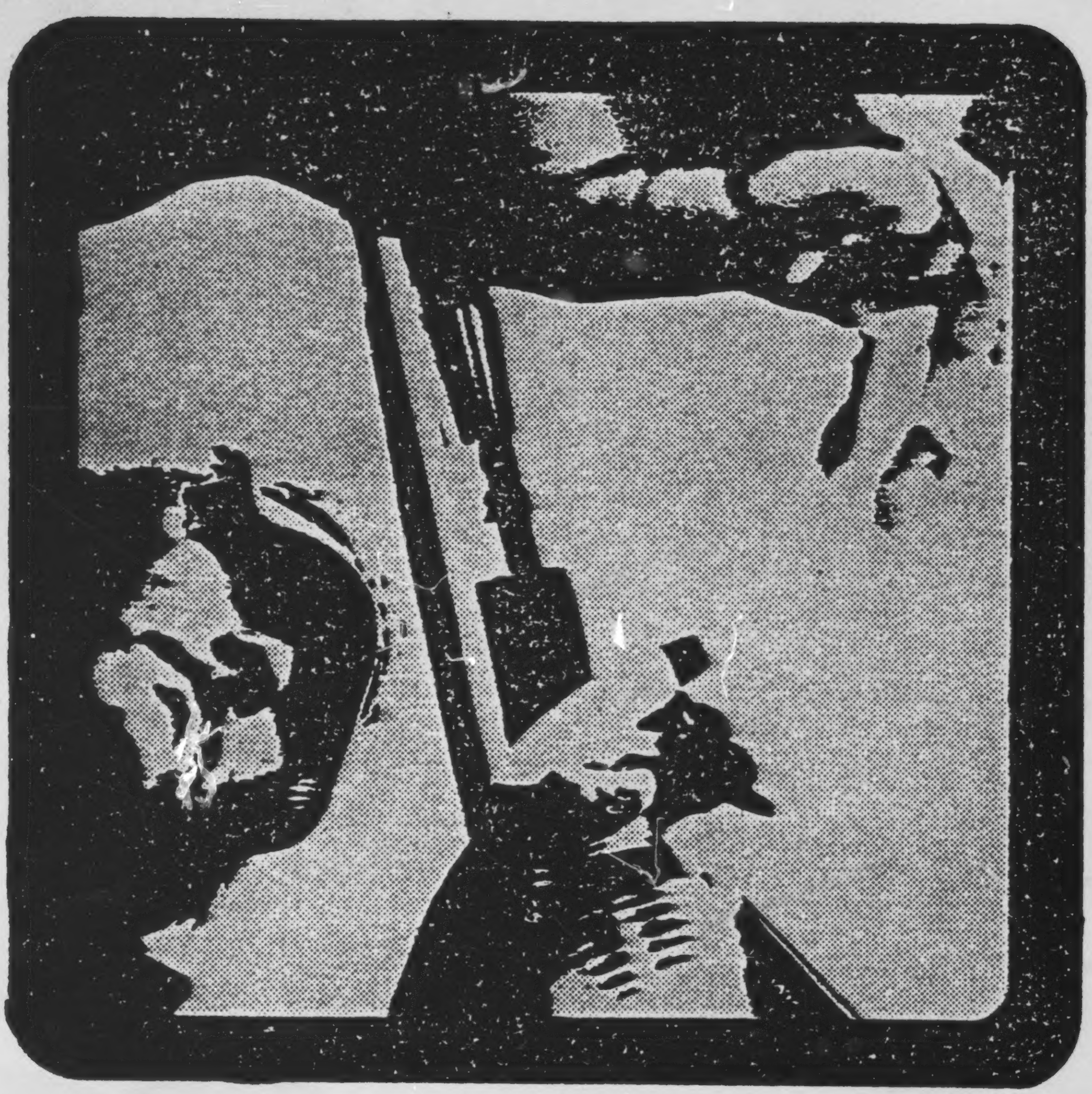


12. CLEAN MOWER AND TRACTOR BY SPRAYING THEIR UNDERSIDES WITH WATER.

JOB STEPS

13. PUT ALL MACHINES AWAY.





building maintenance & engineering

unit: LAWN CARE - GENERAL MAINTENANCE

capital area career center

module: 2201 07 013 3 date: 5/77 level: I

skill title: WATERING A LAWN

developed & written by: DEBRA CONSTANTINI

visuals by: GLEN COOLEY

WORD GUIDE

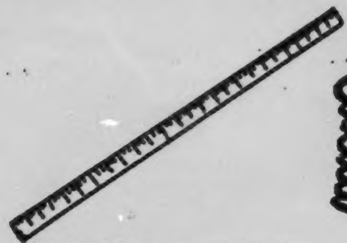
SPRINKLER - THROWS WATER ON A LAWN.

PERFORMANCE OBJECTIVE

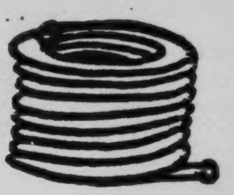
YOU ARE GOING TO LEARN:

HOW TO WATER A LAWN.

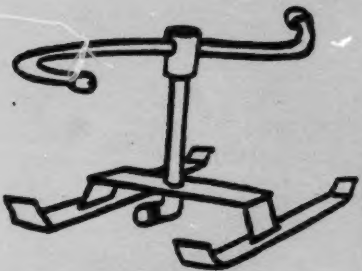
AND IN ORDER TO DO THIS YOU WILL NEED:



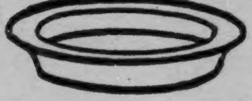
MEASURING STICK



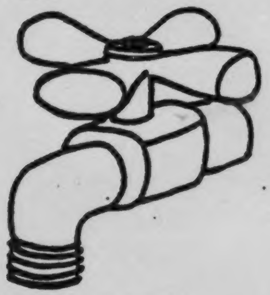
GARDEN HOSE



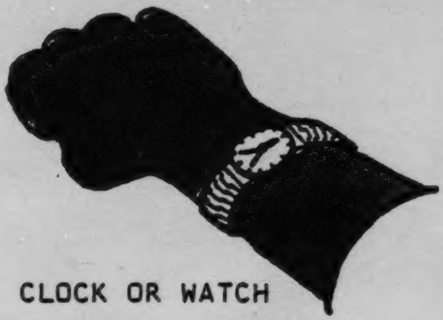
SPRINKLER



PAN



WATER SUPPLY



CLOCK OR WATCH

WE WILL KNOW YOU CAN DO IT WHEN:

YOU WATER THE LAWN ONE INCH EVERY 7 DAYS.

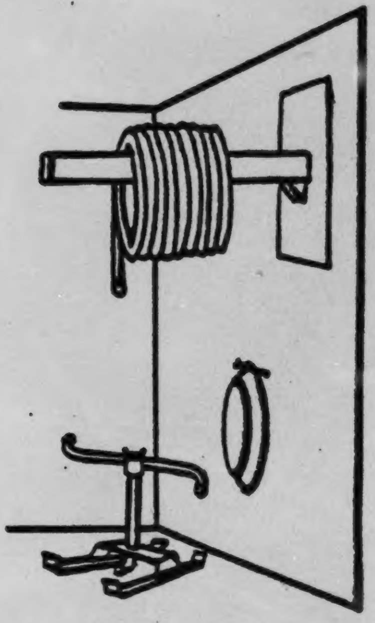
JOB STEPS

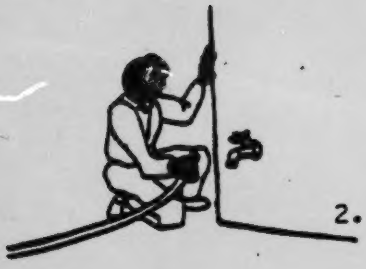
WORD GUIDE

VARY - TO MAKE DIFFERENT, TO CHANGE.

CLOCKWISE - TO THE RIGHT.

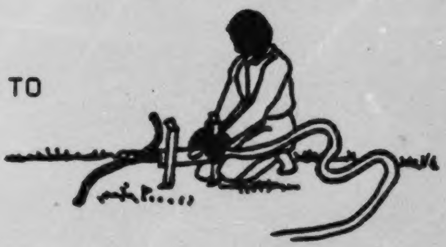
1. GET ALL EQUIPMENT AND TAKE IT TO YOUR WORK AREA.

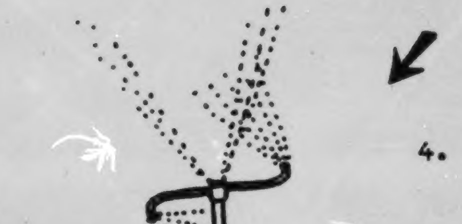




2. SCREW HOSE IN A CLOCKWISE DIRECTION, ONTO OUTSIDE FAUCET.

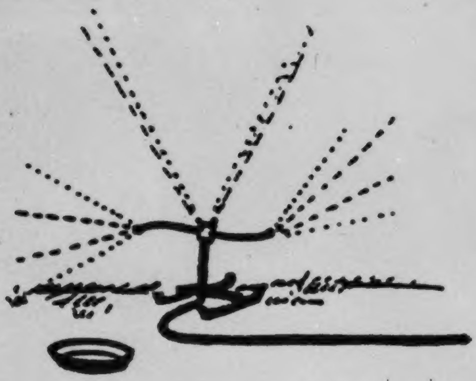
3. SCREW OTHER END OF HOSE TO SPRINKLER.



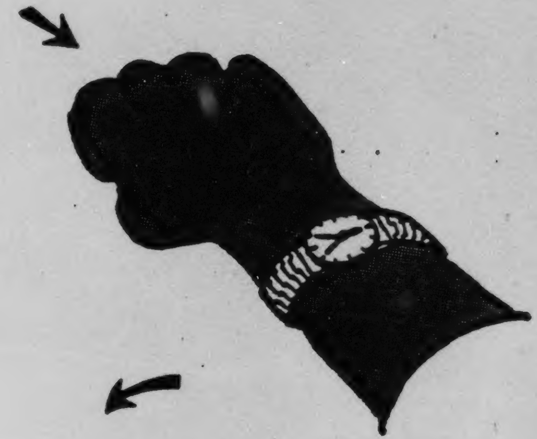


4. PUT SPRINKLER ON THE LAWN.

JOB STEPS

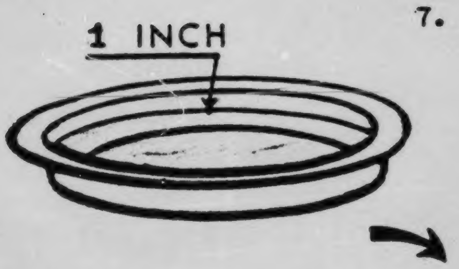


5. PUT PAN WHERE WATER FROM SPRINKLER WILL FALL INTO IT AND THEN TURN ON WATER.



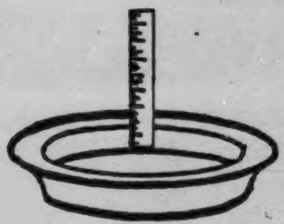
6. LOOK AT WATCH OR CLOCK AND THEN, WRITE DOWN THE TIME.

NOTE: IT TAKES ABOUT 20 MINUTES TO WATER THE LAWN ONE INCH. THE TIME WILL VARY, DEPENDING ON THE TYPE OF SPRINKLER USED.



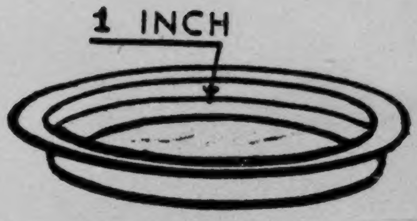
7. WHEN YOU THINK THERE IS ONE INCH OF WATER IN THE PAN, SHUT OFF THE WATER.

8. MEASURE THE AMOUNT OF WATER IN THE PAN.



JOB STEPS

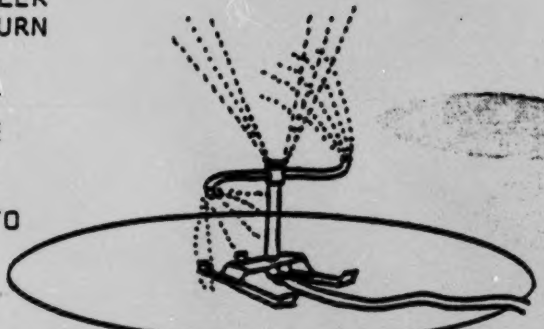
9. IF THERE IS LESS THAN ONE INCH OF WATER IN PAN, TURN ON SPRINKLER UNTIL THERE IS ONE INCH OF WATER IN PAN.



10. WHEN THERE IS ONE INCH OF WATER IN THE PAN, TURN OFF WATER. THEN, LOOK AT YOUR WATCH. WRITE DOWN THE TIME IT TOOK TO GET 1 INCH OF WATER IN THE PAN (LOOK BACK TO STEP 6 FOR STARTING TIME).

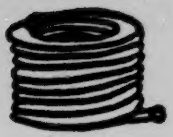
11. AFTER YOU HAVE WATERED AN AREA ONE INCH, MOVE THE SPRINKLER TO ANOTHER AREA. THEN, TURN ON WATER.

NOTE: ALLOW THE SAME AMOUNT OF TIME IT TAKES TO SPRINKLE ONE INCH OF WATER EACH TIME YOU MOVE THE SPRINKLER TO A NEW AREA. YOU DO NOT NEED TO USE PAN AGAIN..



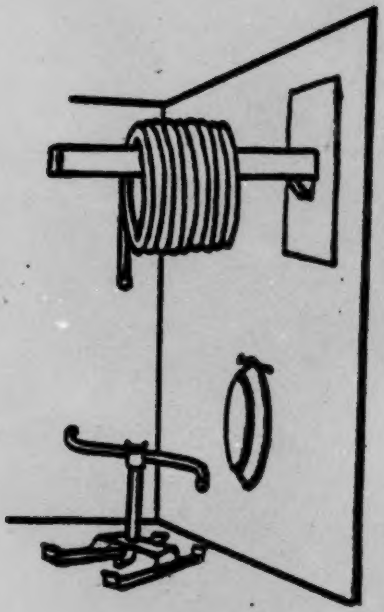
12. REPEAT STEP 11 UNTIL YOU HAVE WATERED ALL AREAS.

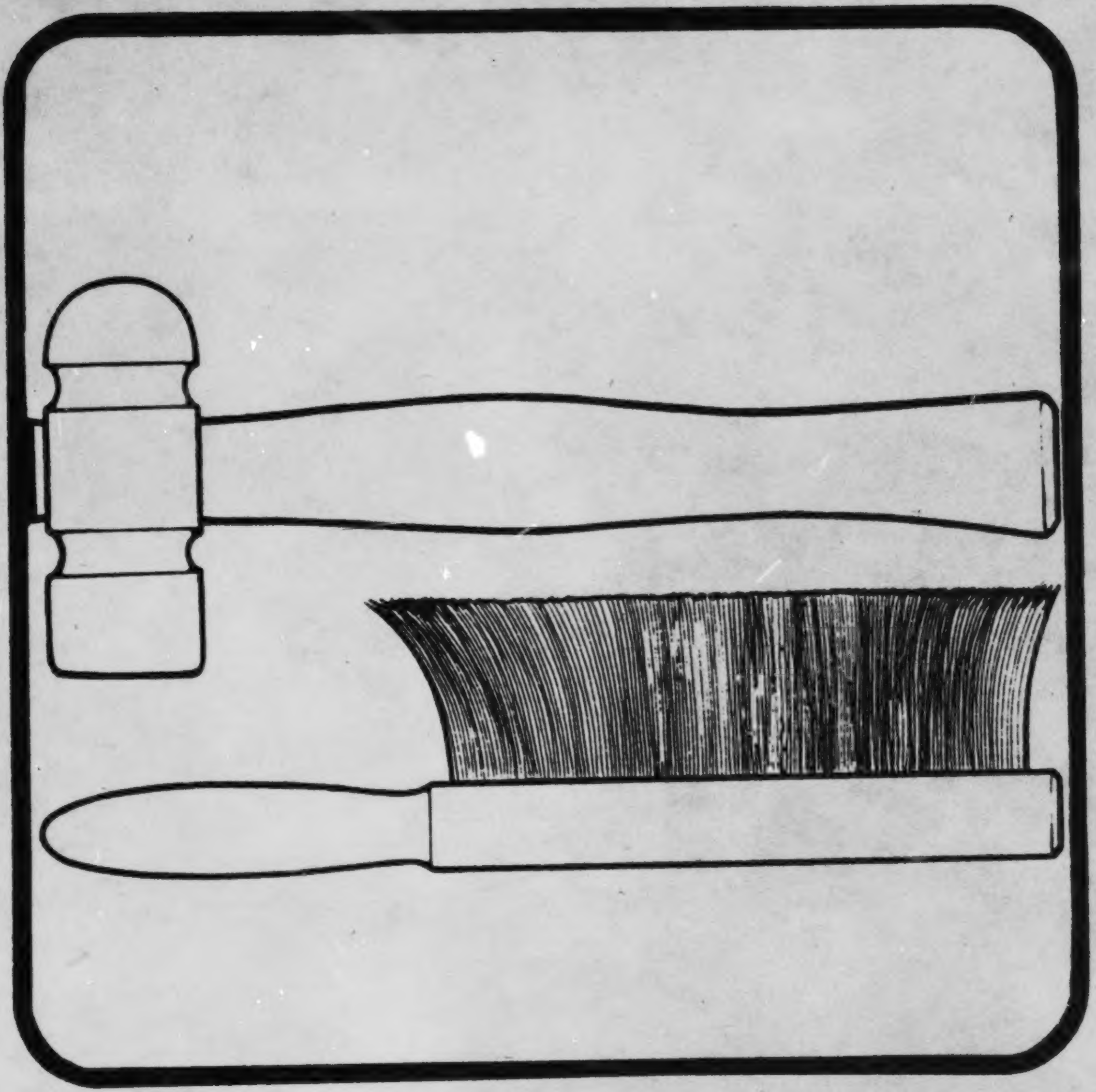
JOB STEPS



13. WHEN YOU FINISH WATERING, ROLL HOSE INTO COIL.

14. PUT AWAY ALL EQUIPMENT.





building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 014 3 date: MARCH 1977 level: I

skill title: USE OF MECHANICAL SPREADER

developed & written by: ALAN STEINBERG

visuals by: BRUCE BENNETT

WORD GUIDE

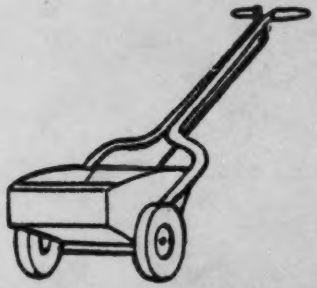
FERTILIZER - PLANT FOOD.

PERFORMANCE OBJECTIVE

WHAT YOU ARE GOING TO LEARN:

HOW TO MAKE SETTINGS ON A MECHANICAL SPREADER.

AND IN ORDER TO DO THIS YOU WILL NEED:



A MECHANICAL SPREADER

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE MADE SETTINGS FOR BOTH HEAVY AND LIGHT AMOUNTS OF FERTILIZER.

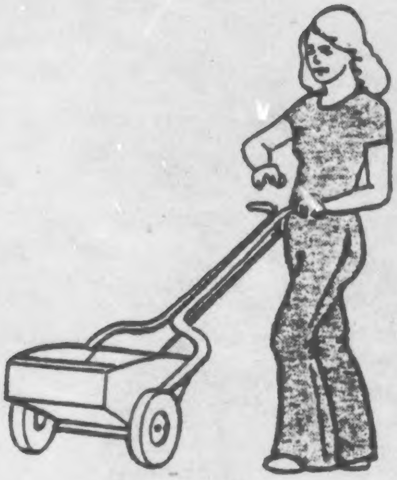
INFORMATION

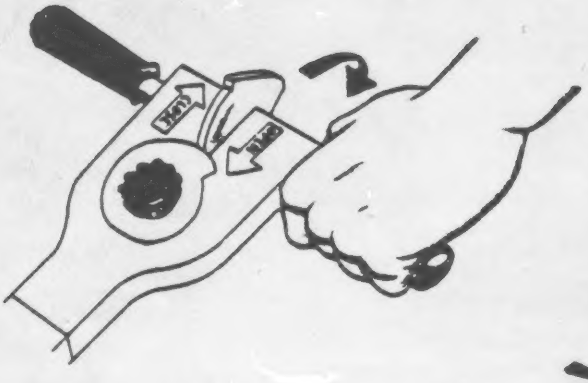
YOU USE A MECHANICAL SPREADER BECAUSE IT PUTS FERTILIZER ON A LAWN FASTER AND MORE EVENLY THAN IF YOU USE YOUR HANDS.

IF YOU READ THE DIRECTIONS ON THE SPREADER AND ON THE BAG OF FERTILIZER, YOU WILL SEE HOW TO MEASURE THE RIGHT AMOUNT OF SEED OR FERTILIZER THAT YOU WILL USE.

JOB STEPS

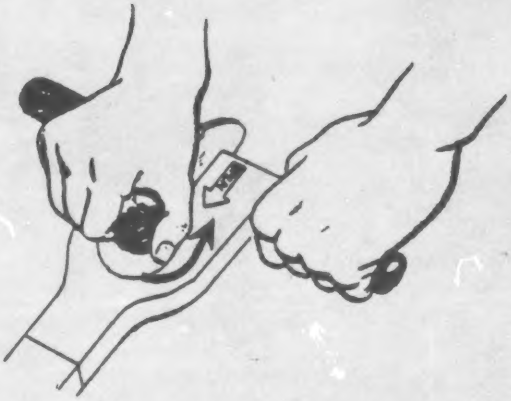
1. TAKE MECHANICAL SPREADER TO THE AREA WHERE YOU WILL WORK.

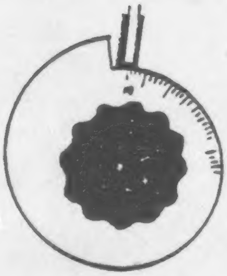




2. TURN HANDLES TO CLOSE. EACH IS MARKED WITH AN ARROW.

3. TURN THE LOCKING KNOB COUNTER-CLOCKWISE TO LOOSEN.

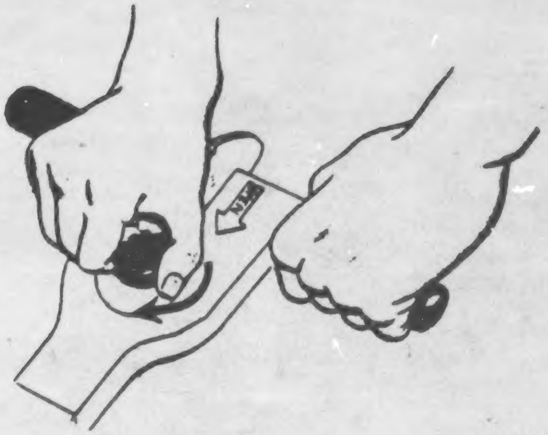


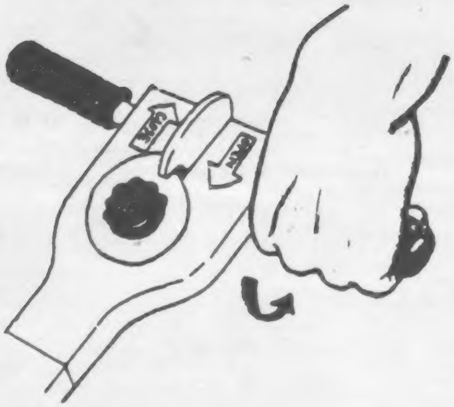


4. MOVE DIAL-FACE TO THE LEFT SO THE NUMBER "19" IS IN THE CENTER OF SLOT. THIS IS ON THE HANDLE.

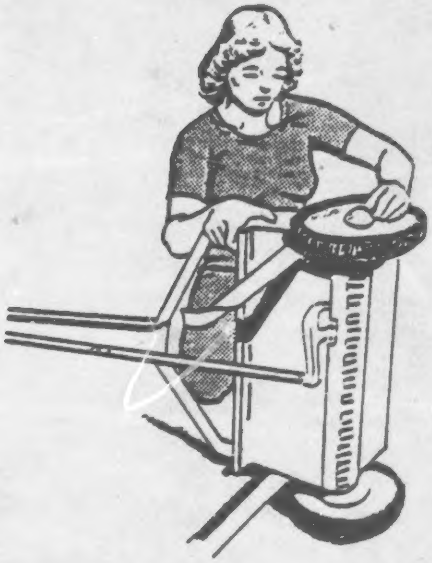
JOB STEPS

5. TURN LOCKING KNOB CLOCKWISE TO TIGHTEN.

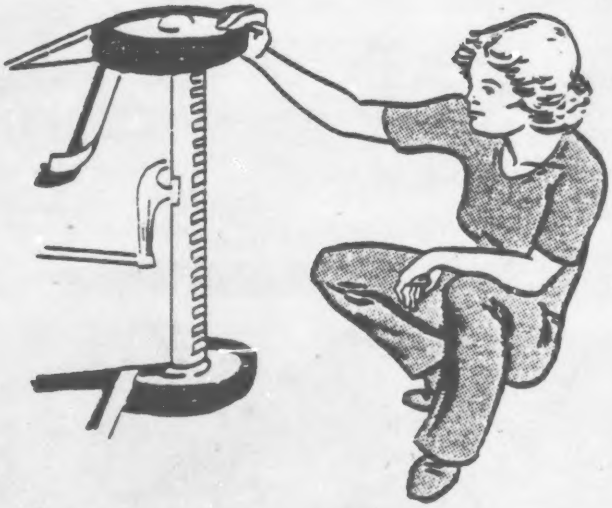




6. TURN HANDLES TO OPEN. EACH IS MARKED WITH AN ARROW.



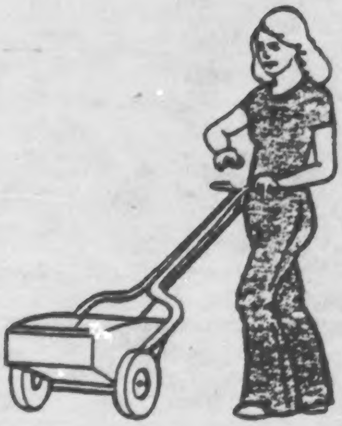
7. TURN THE SPREADER ON ITS SIDE.

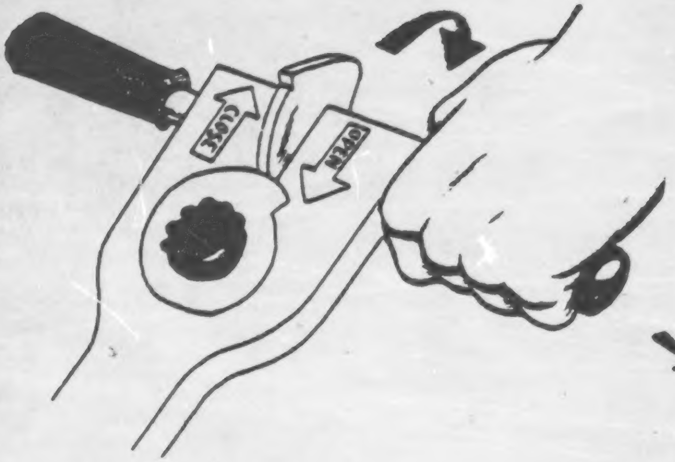


8. LOOK AT HOW LARGE THE HOLE IS NOW.

JOB STEPS

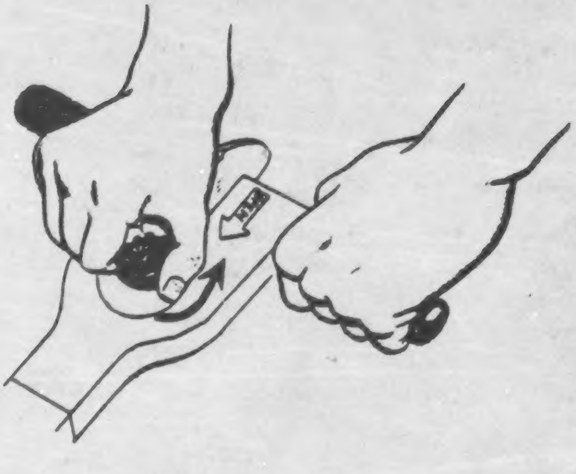
9. PUT SPREADER ON ITS WHEELS.

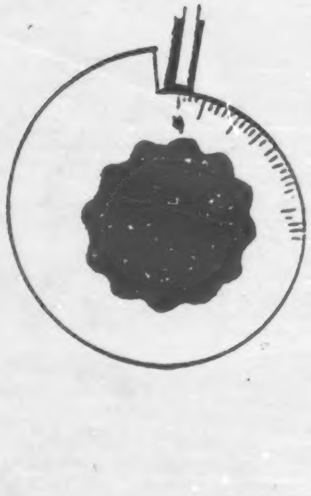




10. TURN HANDLES TO CLOSE.

11. LOOSEN BLACK KNOB.

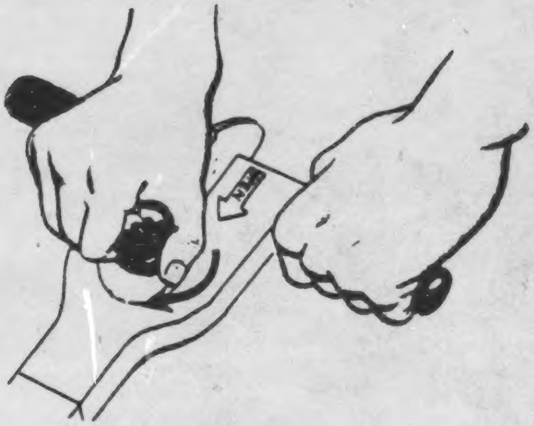


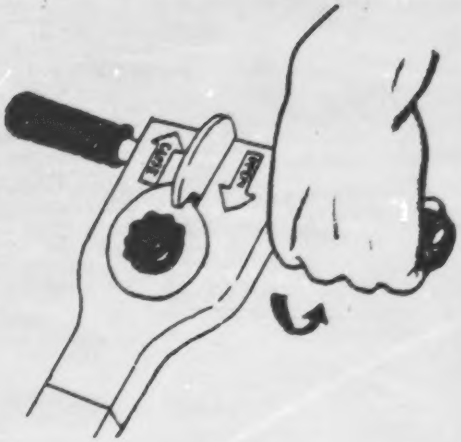


12. TURN THE DIAL SO THE NUMBER "4" IS IN THE CENTER OF SLOT.

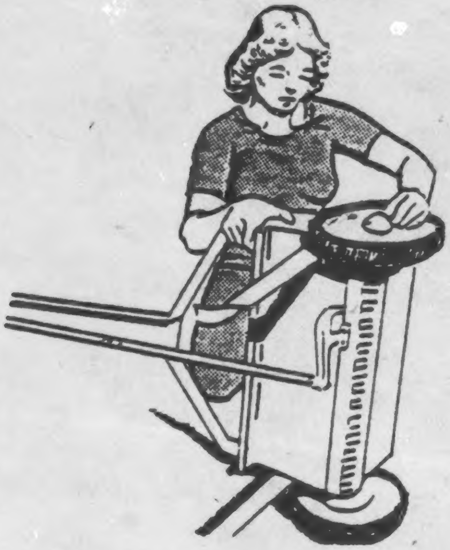
JOB STEPS

13. TIGHTEN BLACK KNOB.

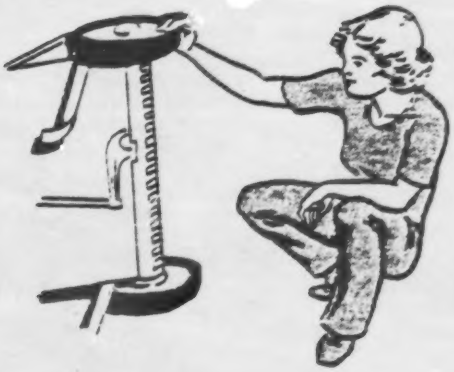




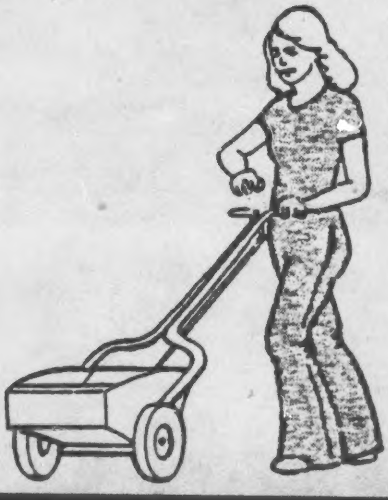
14. TURN HANDLES TO OPEN.



15. TURN SPREADER ON ITS SIDE.



16. LOOK AT HOW LARGE THE HOLE IS NOW. COMPARE "19" AND "4" SETTINGS.



17. RETURN THE SPREADER.

18. TELL YOUR INSTRUCTOR WHAT SETTING TO USE WHEN SPREADING A SMALL AMOUNT OF FERTILIZER.

building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 015 3 **date:** 3/18/77 **level:** 1

skill title: FERTILIZING A LAWN

developed & written by: ALAN STEINBERG

visuals by:

WORD GUIDE

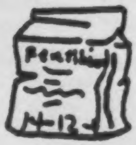
FERTILIZER - PLANT FOOD.

PERFORMANCE OBJECTIVE

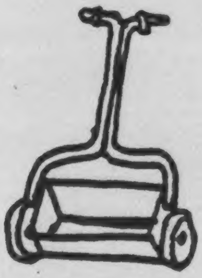
WHAT YOU ARE GOING TO LEARN:

HOW TO CORRECTLY SPREAD FERTILIZER ON A LAWN.

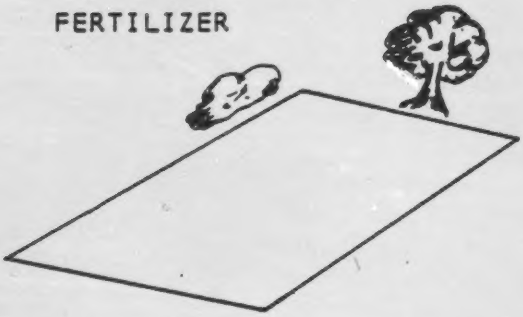
AND IN ORDER TO DO THIS YOU WILL NEED:



FERTILIZER



MECHANICAL SPREADER



AREA OF LAWN

GARDEN HOSE AND NOZZLE

WE WILL KNOW YOU CAN DO IT WHEN:

YOU PUT FERTILIZER ON THE LAWN AND CAN FOLLOW DIRECTIONS ON FERTILIZER BAG.

INFORMATION

WHEN YOU FERTILIZE A LAWN, YOU WILL HELP MAKE THE GRASS GROW FASTER AND KEEP THE GRASS HEALTHY.

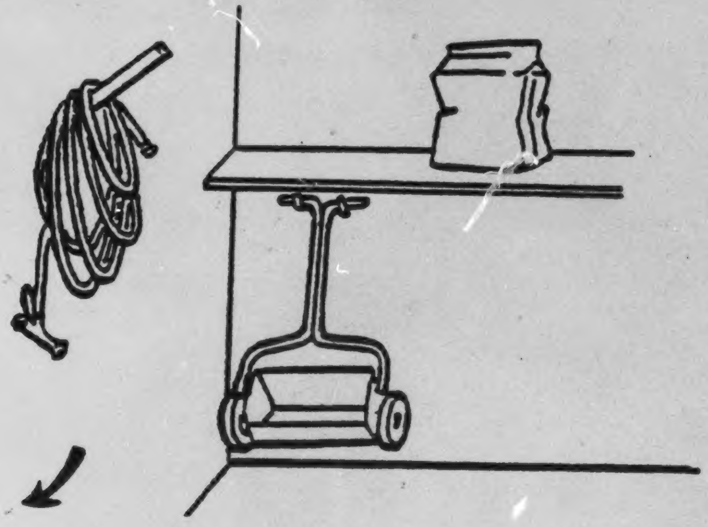
YOU MAY USE ANY KIND OF FERTILIZER SOLD IN GARDEN STORES. BE SURE TO FOLLOW THE DIRECTIONS ON EACH BAG OF FERTILIZER.

IF YOU FOLLOW THESE DIRECTIONS AND COMPLETE MODULE 2201 07 014 3, YOU WILL KNOW HOW TO SET A MECHANICAL FERTILIZER-SPREADER.

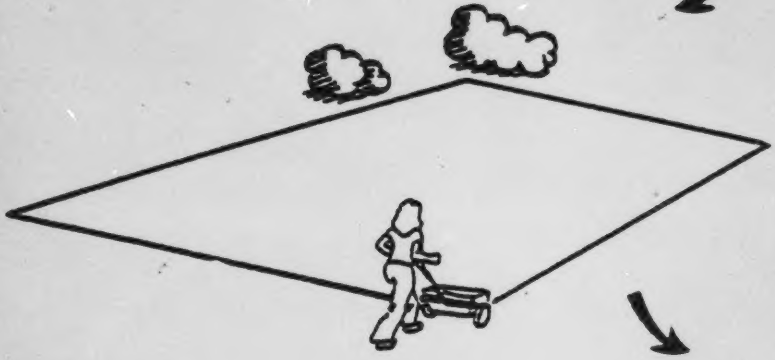
WORD GUIDE

CONTROL LEVER - CONTROLS AMOUNT OF FERTILIZER SPREAD.

JOB STEPS

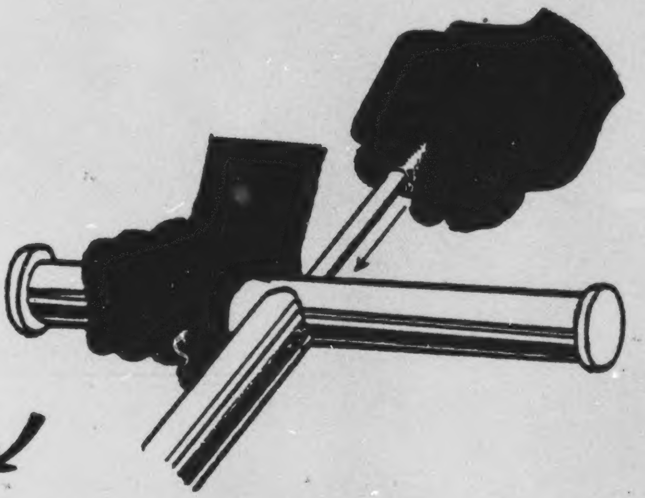


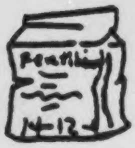
1. GET ALL EQUIPMENT YOU WILL NEED.



2. TAKE IT TO THE WORK AREA WHERE YOU WILL FERTILIZE A LAWN.

3. CLOSE CONTROL LEVER ON HANDLE.





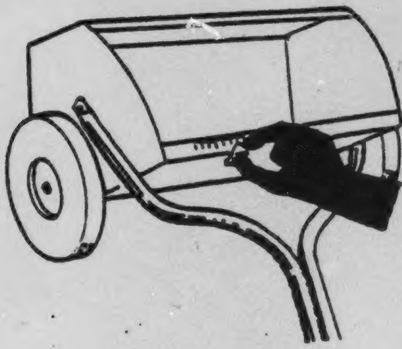
4. FIND NUMBER SETTING ON FERTILIZER BAG.

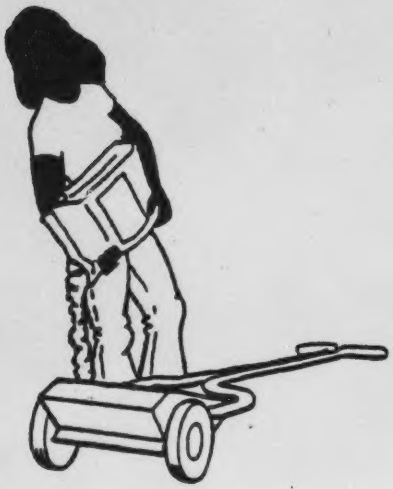
WORD GUIDE

HOPPER - A CHUTE, BOX OR CONTAINER THAT HOLDS MATERIALS.

JOB STEPS

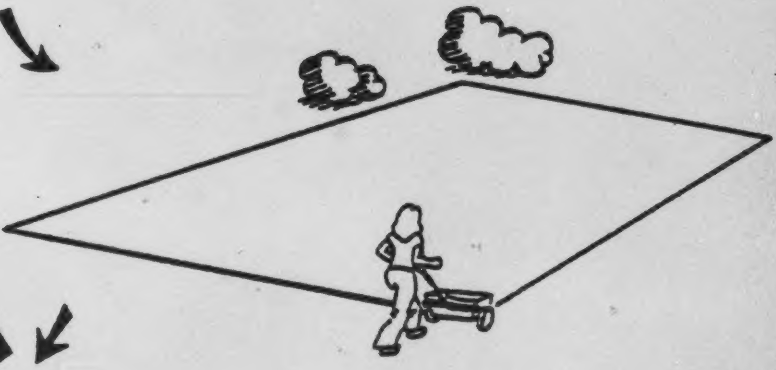
5. SET DIAL ON THE SPREADER TO THE CORRECT NUMBER.

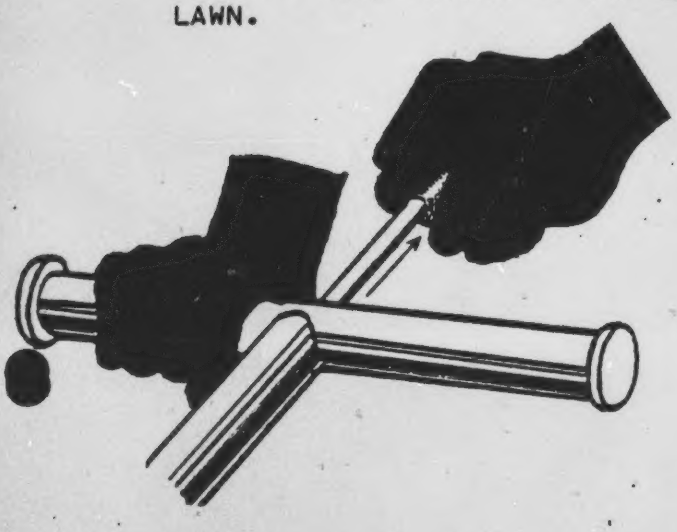




6. FILL THE HOPPER OF SPREADER WITH FERTILIZER.

7. START AT ONE CORNER OF THE LAWN.

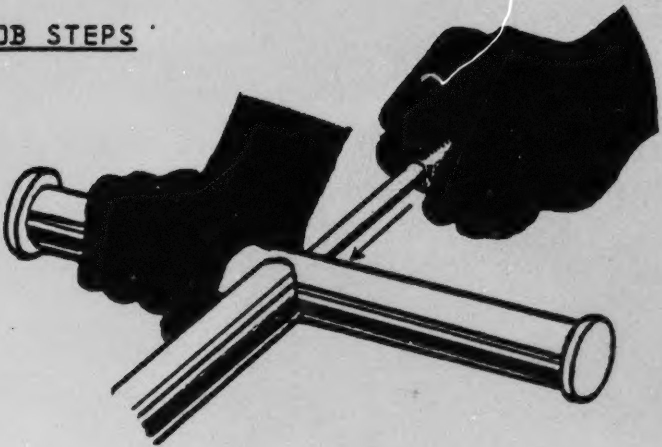


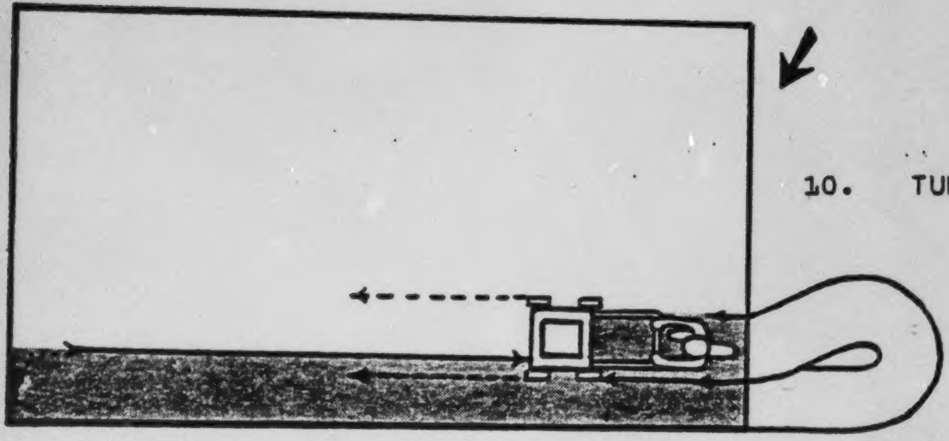


8. OPEN CONTROL LEVER AND, AT THE SAME TIME, START WALKING IN A STRAIGHT LINE.

JOB STEPS

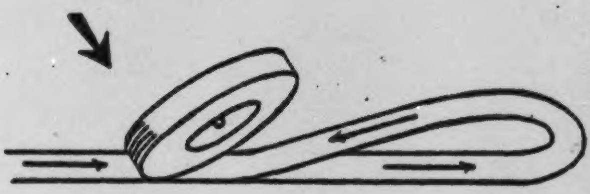
9. AS YOU COME TO THE END OF THE ROW, CLOSE CONTROL LEVER.

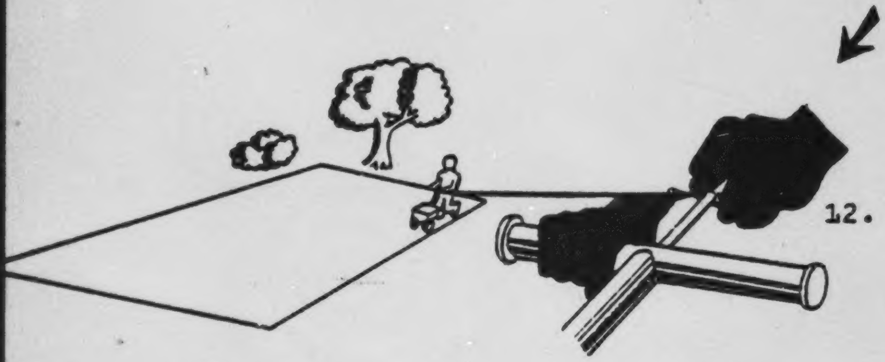




10. TURN AROUND.

11. PUSH THE SPREADER NOW SO THAT ONE WHEEL RUNS IN THE WHEEL MARK MADE ON THE LAST PASS.

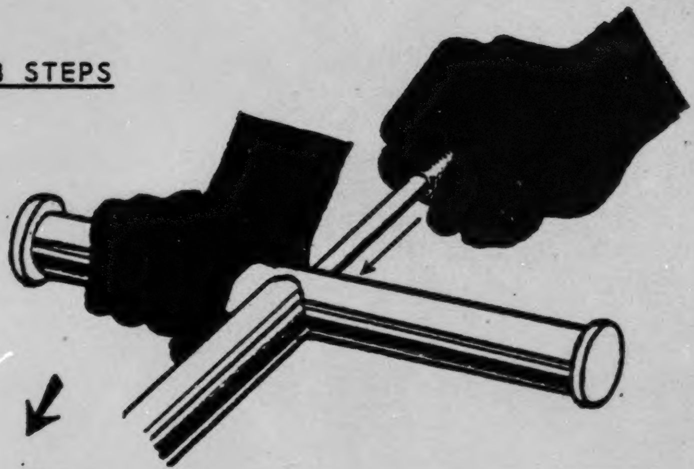


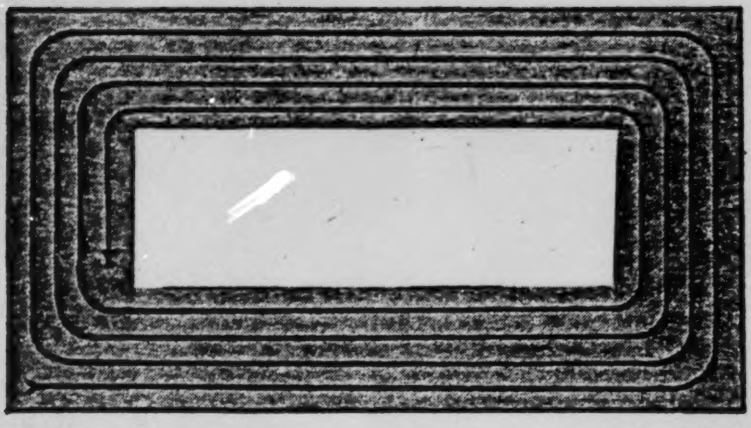


12. OPEN CONTROL LEVER AND, AT THE SAME TIME, START WALKING IN A STRAIGHT LINE.

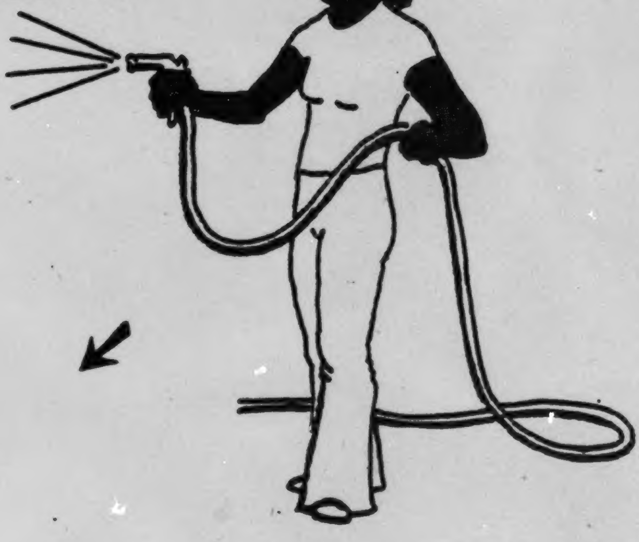
JOB STEPS

13. BE SURE YOU CLOSE CONTROL LEVER WHEN YOU REACH THE END OF EACH PASS.

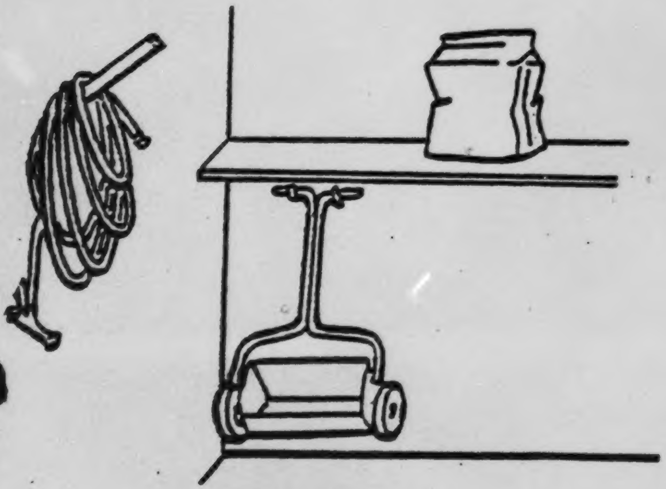




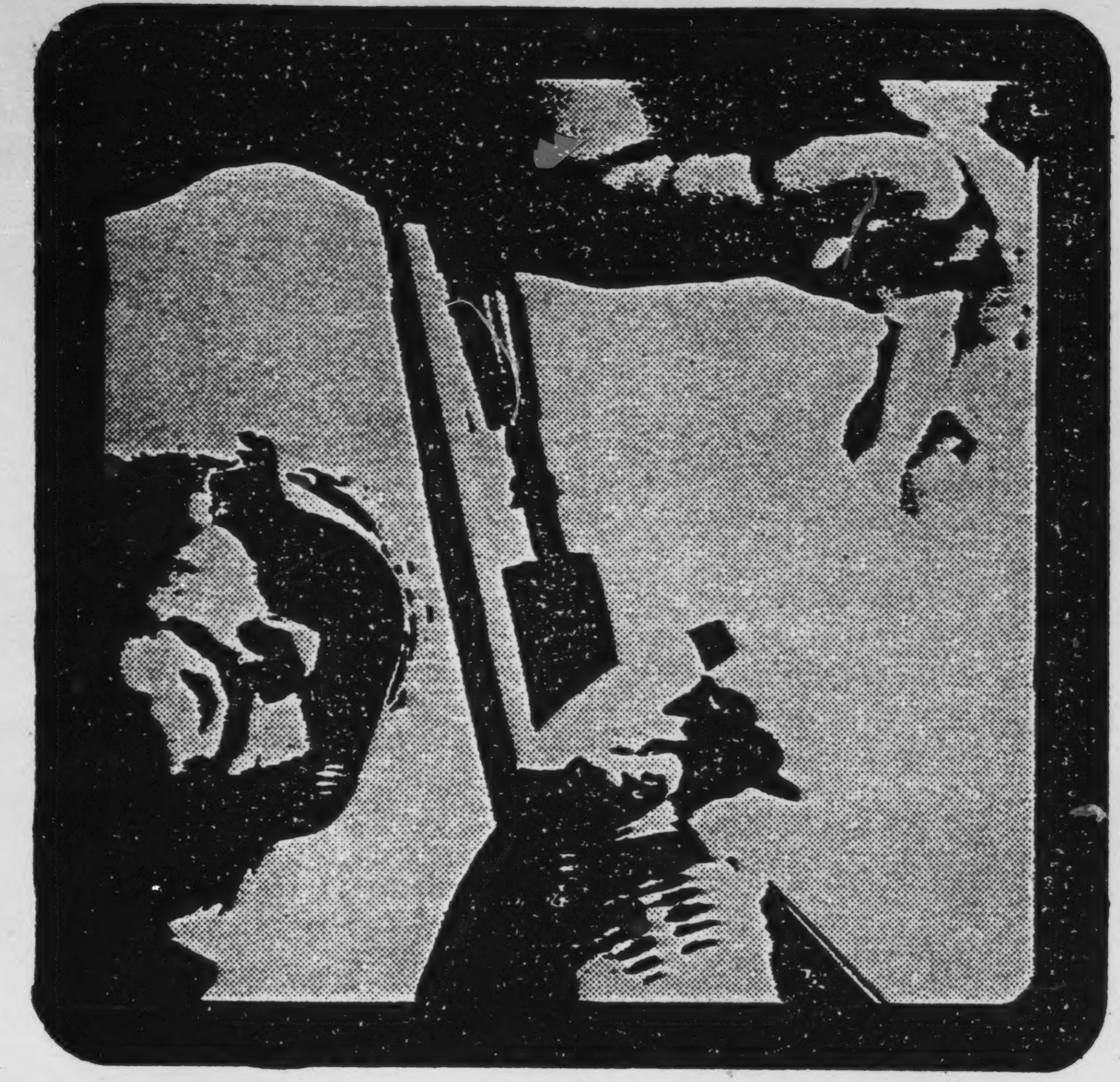
14. FERTILIZE ENTIRE AREA.



15. CLEAN SPREADER WITH HOSE AND NOZZLE. OPEN CONTROL LEVER AND LET WATER DRAIN OUT ALL FERTILIZER.



16. RETURN ALL EQUIPMENT.



building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 016 3 date: 4/77 level: I

skill title: PREPARE SOIL FOR A NEW LAWN

developed & written by: DEBORAH J. LIVINGSTON-WHITE

visuals by: GLEN COOLEY

WORD GUIDE

CLODS - LUMPS OF SOIL.

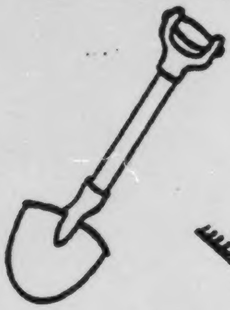
PREPARE - TO GET READY.

PERFORMANCE OBJECTIVE

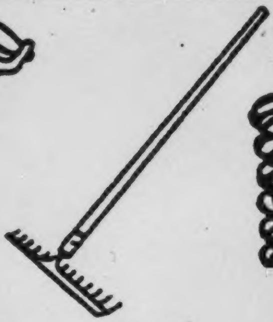
WHAT YOU ARE GOING TO LEARN:

HOW TO PREPARE SOIL FOR PLANTING A NEW LAWN.

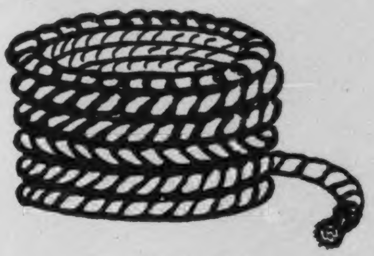
AND IN ORDER TO DO THIS YOU WILL NEED:



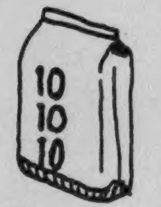
SHOVEL



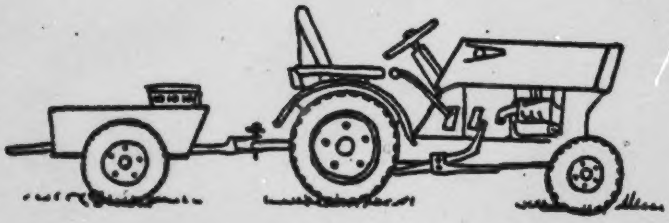
RAKE



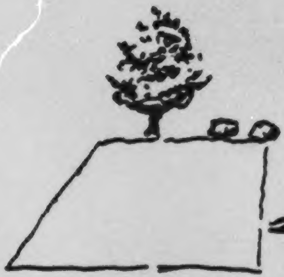
10-FOOT ROPE



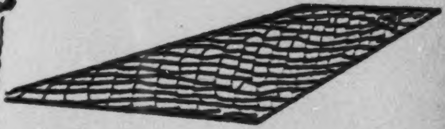
FERTILIZER (10-10-10)



SMALL LAWN TRACTOR--CART



FLAT GROUND



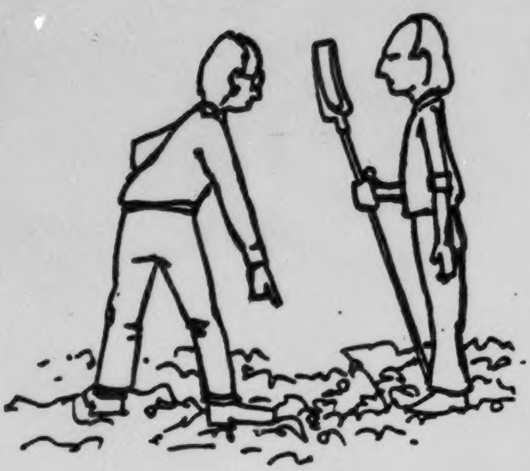
CHAIN LINK MAT

WE WILL KNOW YOU CAN DO IT WHEN:

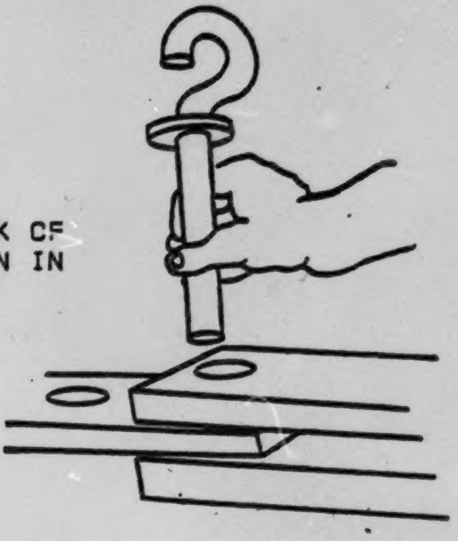
YOU HAVE COMPLETED THE JOB STEPS AND THE SOIL HAS NO STONES OR LARGE CLODS OF DIRT AND IS READY FOR PLANTING A NEW LAWN.

JOB STEPS

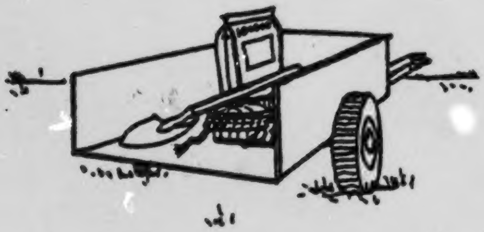
1. DO MODULE 2201 07 010 3 ON THE USE OF A SMALL LAWN TRACTOR.



2. ASK YOUR INSTRUCTOR WHERE YOU ARE TO WORK AND PREPARE THE SOIL FOR A NEW LAWN.

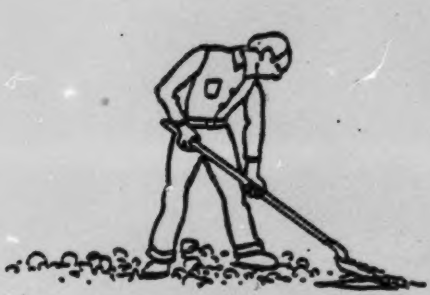


3. HOOK THE CART ON THE BACK OF THE TRACTOR. PUT THE PIN IN THE HOLE.



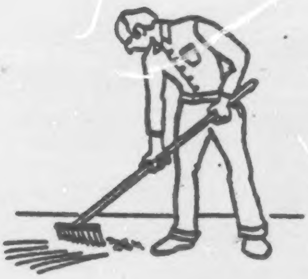
4. PUT ALL THE TOOLS IN THE CART. DRIVE THE TRACTOR TO YOUR WORK AREA.

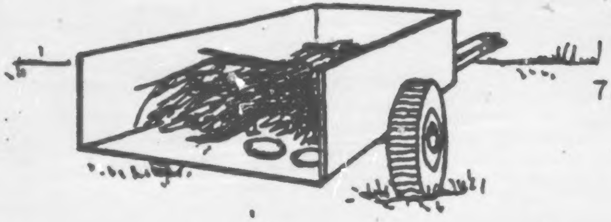
5. USE YOUR SHOVEL TO TURN OVER ALL SOIL IN THE AREA--BREAK UP THE CLODS AS YOU TURN THE SOIL.



JOB STEPS

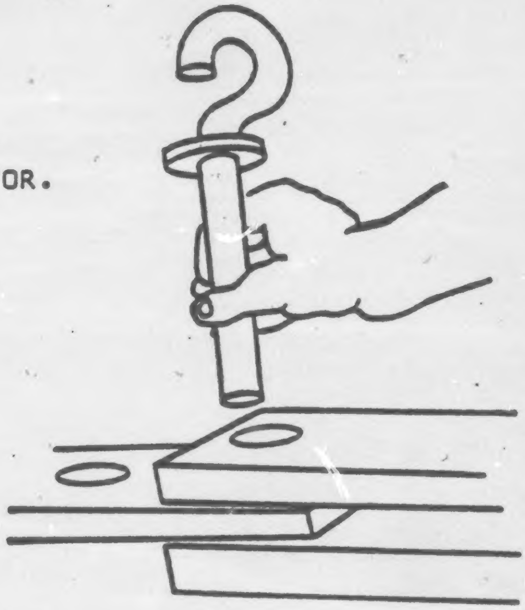
6. RAKE THE SOIL TO BREAK THE CLODS INTO SMALLER PIECES NO BIGGER THAN A QUARTER.

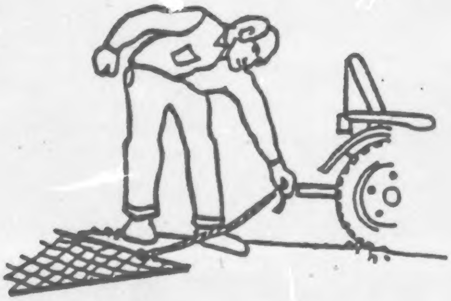




7. PICK UP ALL LARGE STONES, STICKS AND WEEDS. PUT THEM INTO THE CART.

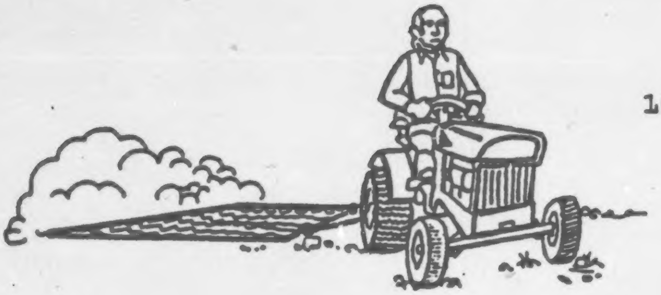
8. UNHOOK CART FROM TRACTOR.



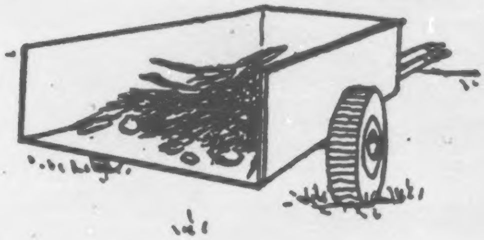


9. TIE THE CHAIN-LINK MAT ON TO THE TRACTOR.

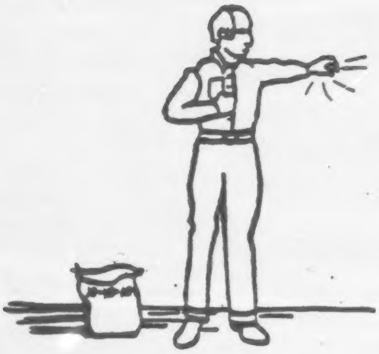
JOB STEPS



10. DRIVE THE TRACTOR ALL AROUND THE AREA. THIS WILL SMOOTH OUT THE SOIL.



11. PICK UP ALL STONES, STICKS OR WEEDS. PUT THEM INTO THE CART.

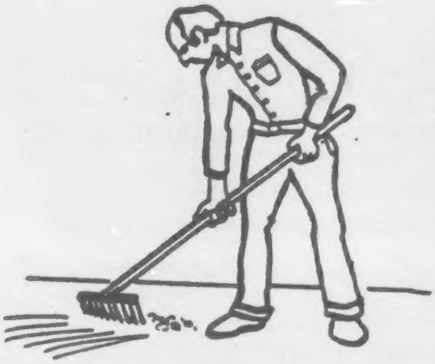


12. USING YOUR HAND, SPRINKLE FERTILIZER OVER THE GROUND.

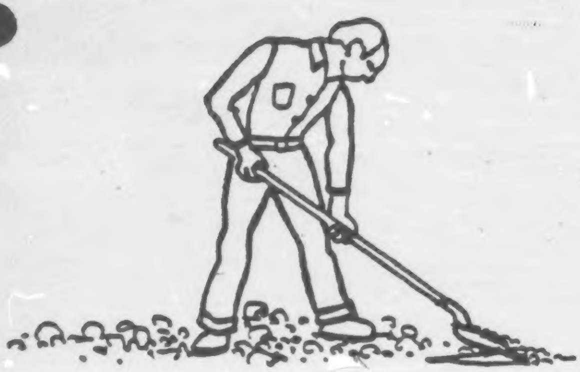
IF YOU HAVE A VERY LARGE AREA, USE A MECHANICAL SPREADER. (DO MODULES 2201 07 014 3 AND 2201 07 015 3 ON THE USE OF A MECHANICAL SPREADER.)

NOTE: USE 3 POUNDS OF FERTILIZER FOR 100 SQUARE FEET OF SOIL.

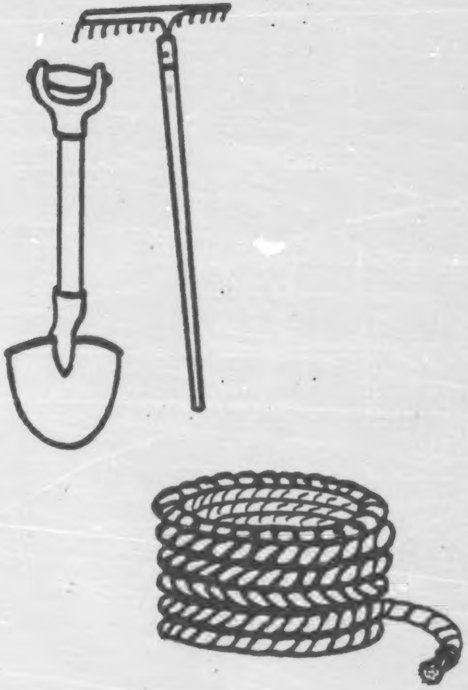
13. RAKE FERTILIZER INTO THE SOIL.



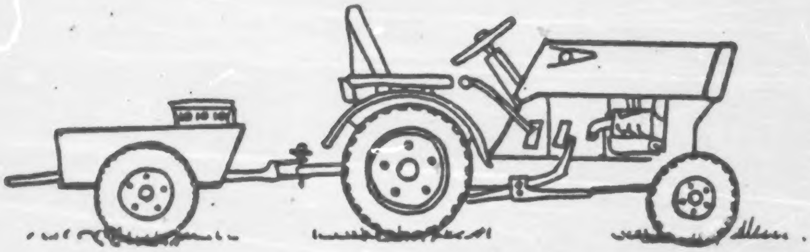
JOB STEPS

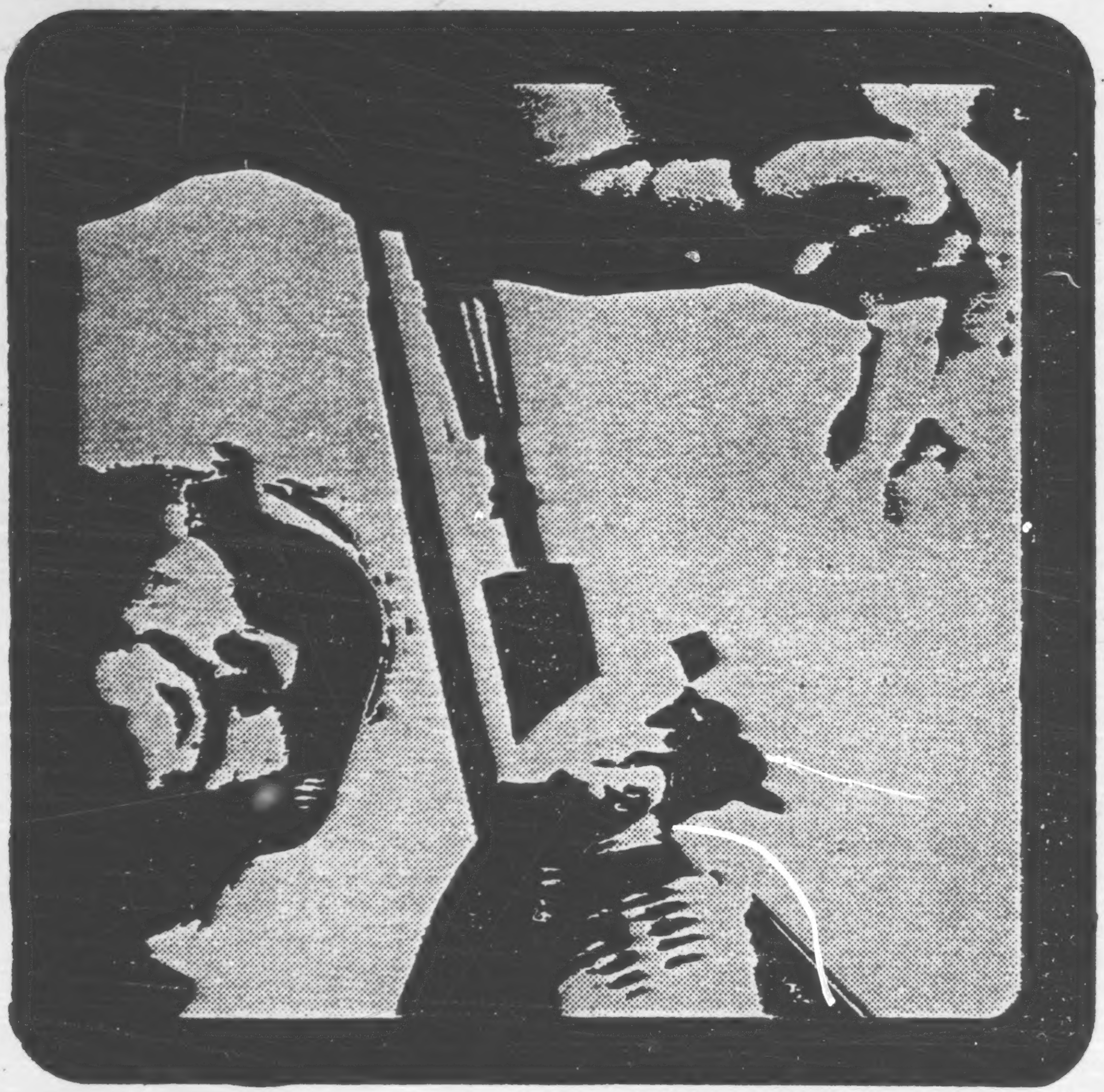


14. USING THE SHOVEL, FILL IN LOW SPOTS. SMOOTH SOIL WITH YOUR RAKE AGAIN.



15. PUT YOUR TOOLS AWAY.





building maintenance & engineering

unit: GROUNDS

capital area career center

module: 2201 07 017 3 date: 3/16/77 level: 1

skill title: PLANTING A NEW LAWN

developed & written by: ALAN STEINBERG

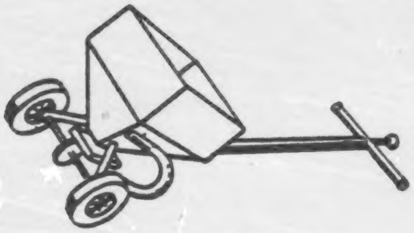
visuals by:

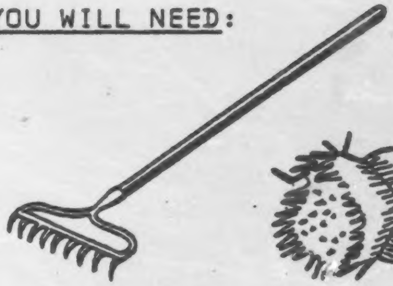
PERFORMANCE OBJECTIVE

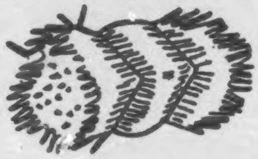
YOU ARE GOING TO LEARN:

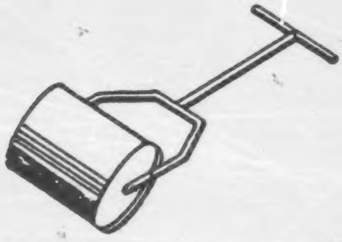
HOW TO PLANT A NEW LAWN.

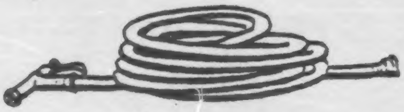
AND IN ORDER TO DO THIS YOU WILL NEED:

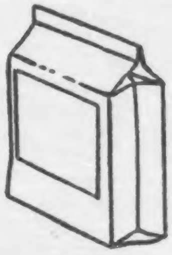

MECHANICAL SEEDER

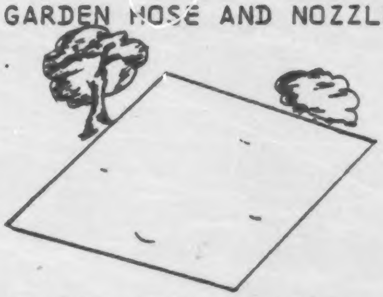

RAKE


STRAW


LIGHT ROLLER (50 POUNDS)


GARDEN HOSE AND NOZZLE


GRASS SEED


A PREPARED AREA OF LAND

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE PLANTED THE GRASS SEED SO THAT THE SEED IS EVENLY SPREAD.

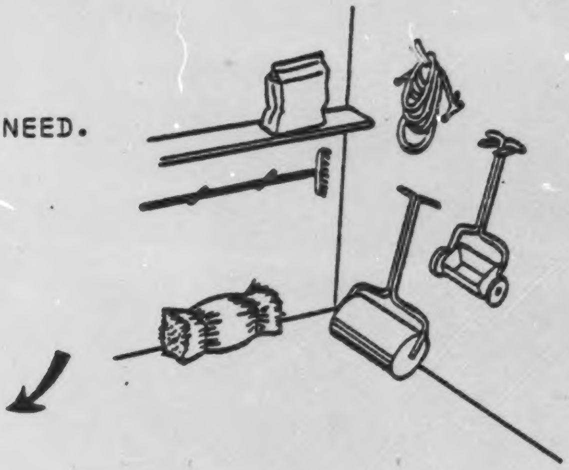
WORD GUIDE

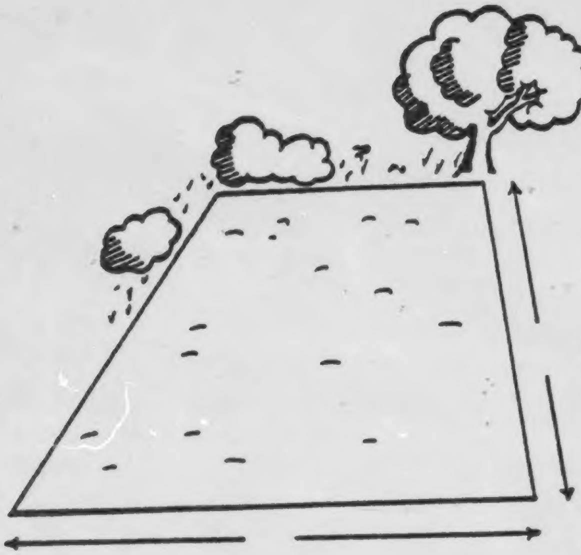
PREPARE - TO MAKE READY.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
BEFORE YOU SEED A NEW LAWN, YOU MUST FIRST PREPARE THE SOIL WITH THE MECHANICAL SEEDER.		
IF YOU COMPLETED MODULE 2201 07 014 3 AND THEN MODULE 2201 07 016 3, YOU WILL KNOW HOW TO PREPARE THE SOIL.		
THERE ARE MANY TYPES OF GRASS SEEDS. HERE ARE SOME:		
MERION BLUE GRASS - IT IS BLUISH-GREEN AND WILL NOT TAKE MUCH WEAR. DO NOT HAVE PEOPLE WALK ON IT.		
KENTUCKY BLUE GRASS - IT TAKES MORE WEAR AND GROWS WELL IN SUMMER.		
RED FESCUE - IT TAKES A LOT OF WEAR AND GROWS WELL IN SHADY AREAS.		
RYE GRASS - IT GROWS VERY FAST AND DIES IN WINTER.		

JOB STEPS

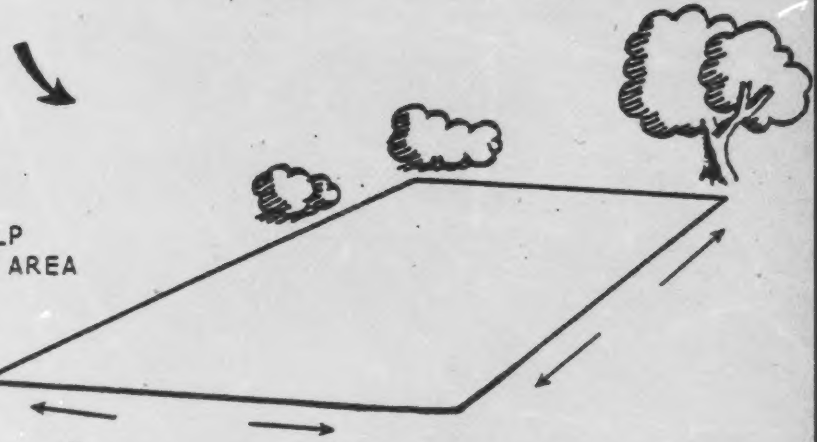
1. GET ALL EQUIPMENT YOU WILL NEED.

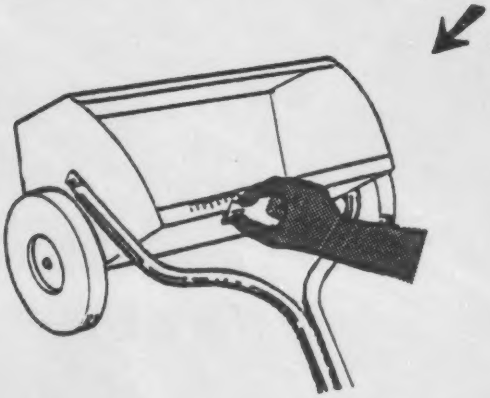




2. TAKE IT TO THE AREA WHERE YOU WILL PLANT A NEW LAWN.

3. ASK YOUR INSTRUCTOR TO HELP YOU FIND OUT HOW LARGE AN AREA YOU WILL BE SEEDING.

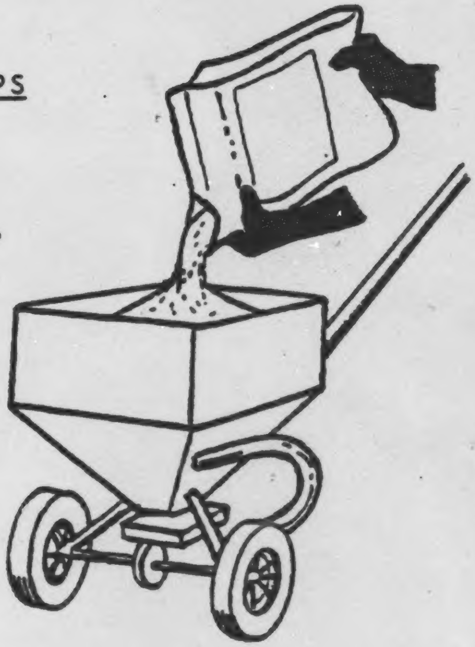




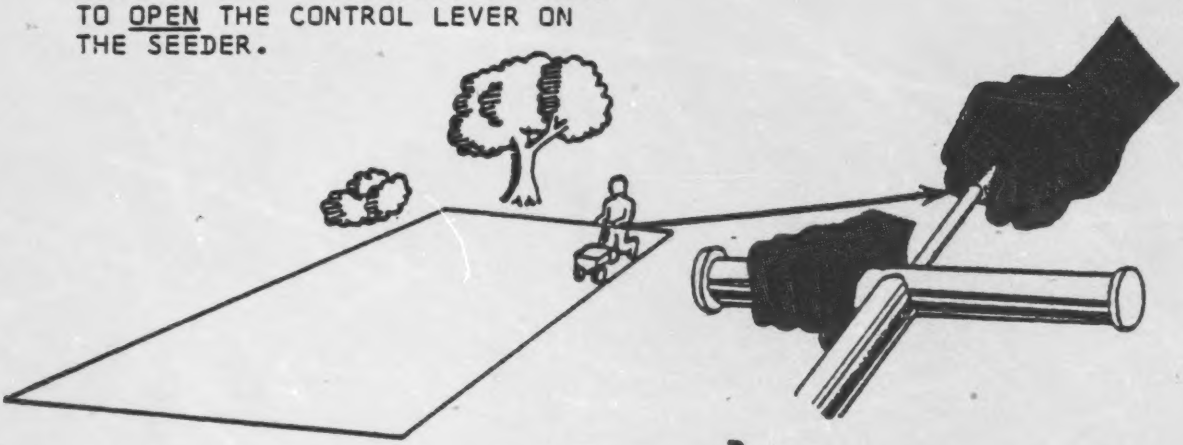
4. READ DIRECTIONS ON MECHANICAL SEEDER. THEN, SET THE SEEDER TO THE RIGHT SETTING.

JOB STEPS

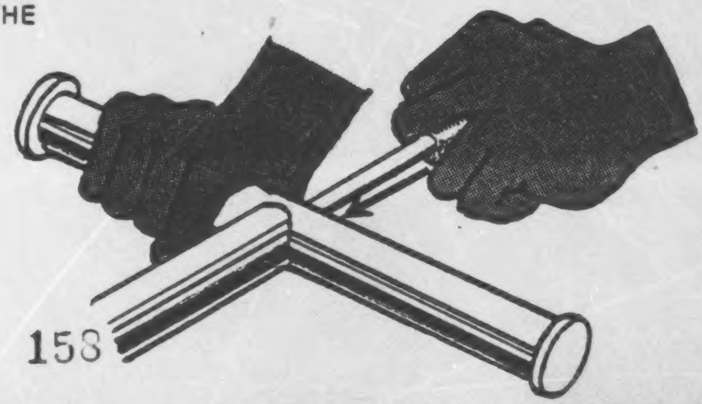
5. POUR GRASS SEED INTO THE SEEDER.



6. BEGIN AT ONE CORNER AND WALK IN A STRAIGHT LINE TO THE OTHER CORNER. AS YOU BEGIN, BE SURE TO OPEN THE CONTROL LEVER ON THE SEEDER.



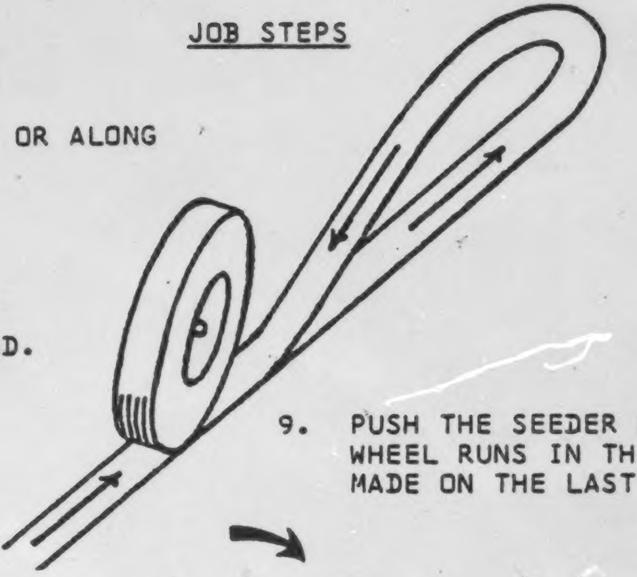
7. WHEN YOU REACH THE OTHER CORNER, CLOSE THE CONTROL LEVER ON THE SEEDER.



JOB STEPS

WORD GUIDE

PASS - MOVEMENT OVER OR ALONG SOMETHING.

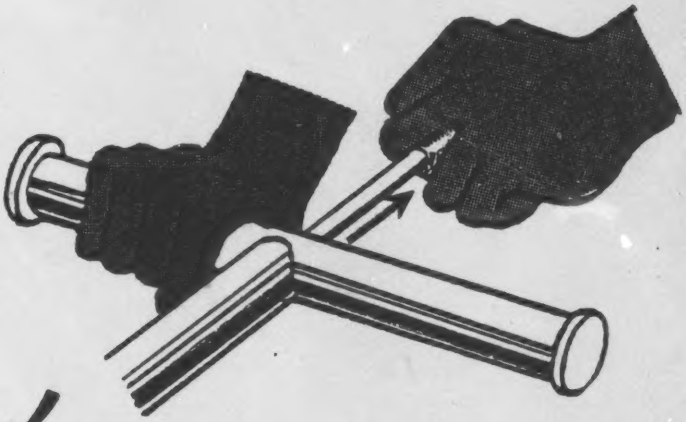


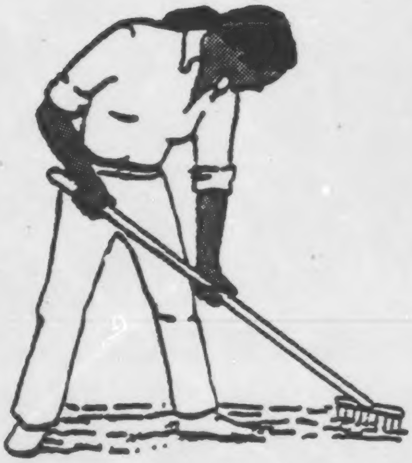
8. TURN AROUND.

9. PUSH THE SEEDER NOW SO THAT ONE WHEEL RUNS IN THE WHEEL MARK MADE ON THE LAST PASS.

10. OPEN THE CONTROL LEVER ON THE SEEDER AND GO BACK-AND-FORTH UNTIL YOU SEED THE WHOLE AREA.

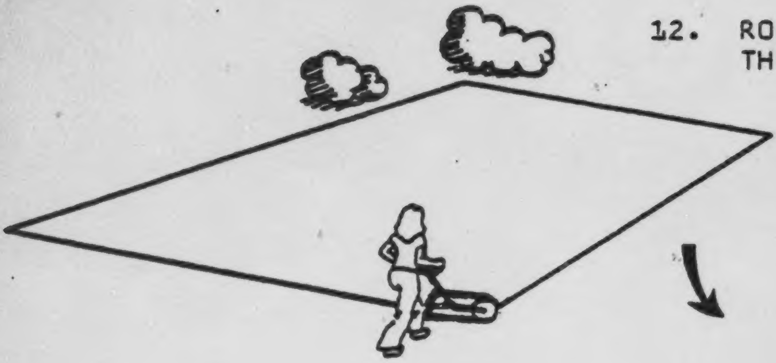
NOTE: BE SURE YOU CLOSE THE LEVER WHENEVER YOU TURN AROUND.



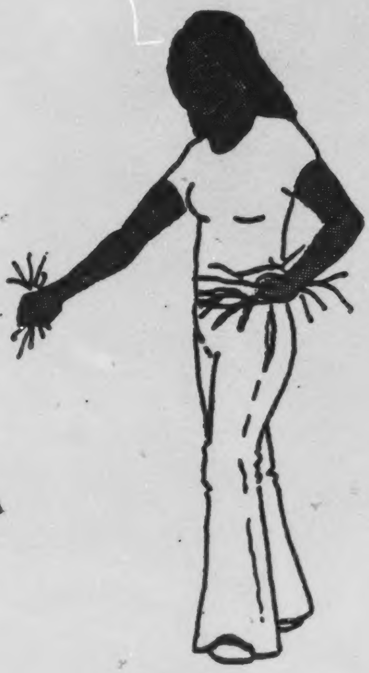


11. GENTLY RAKE THE SEED INTO THE SOIL.

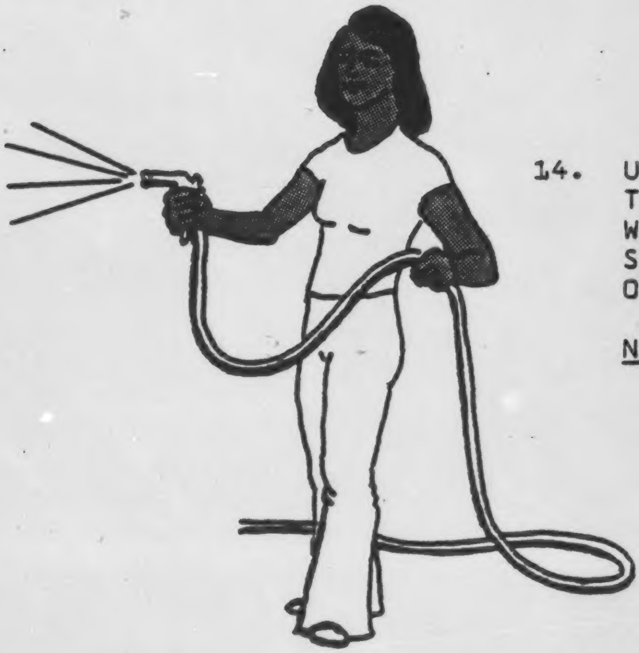
JOB STEPS



12. ROLL THE SEED INTO THE SOIL OVER THE WHOLE AREA.



13. SPREAD THE STRAW LIGHTLY OVER THE WHOLE AREA.

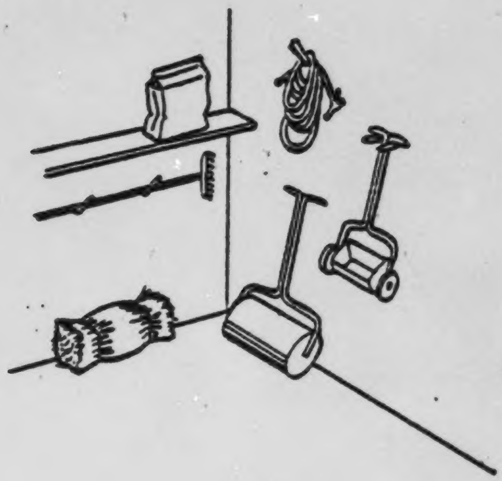


14. USE THE GARDEN HOSE AND NOZZLE TO SPRINKLE WATER OVER THE WHOLE AREA. USE A FINE SPRAY SO YOU DO NOT CAUSE PUDDLES OF SEEDS TO FORM.

NOTE: DO NOT MOW THE NEW GRASS UNTIL IT IS AT LEAST 3 INCHES TALL.

JOB STEPS

15. CLEAN AND RETURN YOUR EQUIPMENT.



building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 018 3 date: 3/20/77 level: 4

skill title: SETTING UP A TRANSIT

developed & written by: ALAN STEINBERG

visuals by: BEVAN SUITS

WORD GUIDE

TRANSIT - USED TO MAKE MEASUREMENTS AT FAR DISTANCES.

TRIPOD - 3-LEGGED SUPPORT THAT HOLDS TRANSIT.

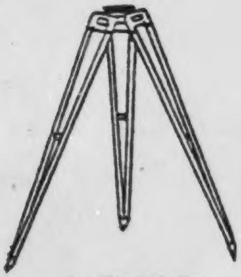
SIGHT - SOMETHING THROUGH WHICH YOU SEE OBJECTS.

PERFORMANCE OBJECTIVE

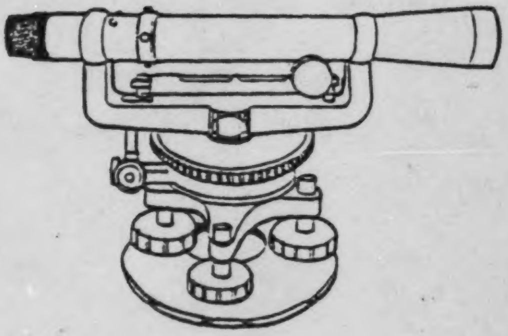
WHAT YOU ARE GOING TO LEARN:

HOW TO SET UP A TRANSIT.

AND IN ORDER TO DO THIS YOU WILL NEED:



A TRIPOD



A TRANSIT

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE COMPLETED THE JOB STEPS AND CAN KEEP THE TRANSIT LEVEL WHEN YOU TURN THE SIGHT.

WORD GUIDE

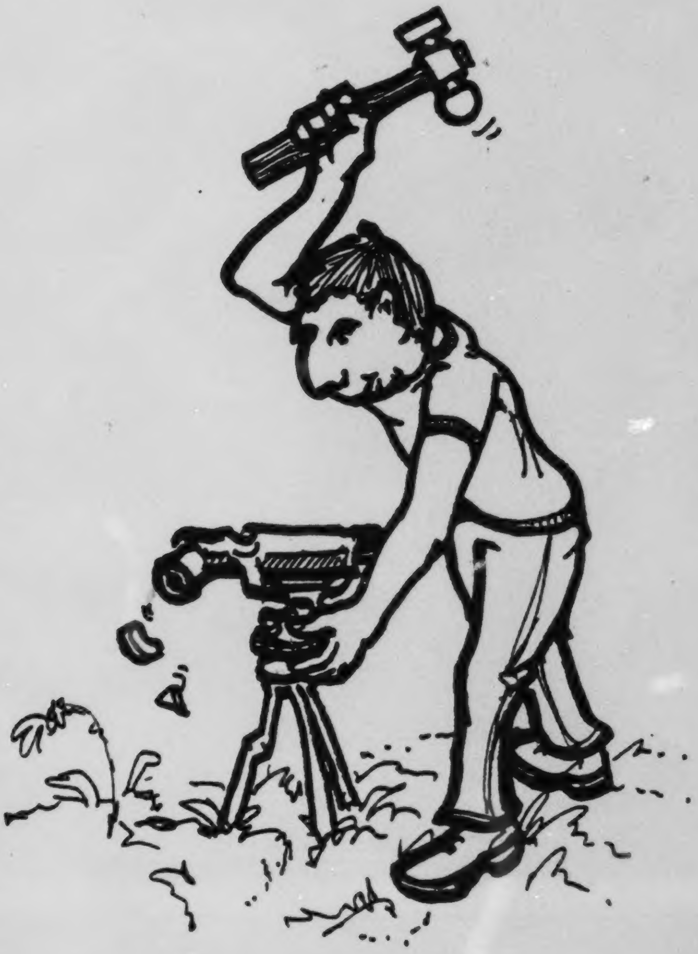
READINGS - MEASUREMENTS WE MAKE BY USING A TRANSIT.

DELICATE - SOMETHING WHICH CAN BREAK EASILY.

INFORMATION

YOU MUST BE SURE TO KEEP A TRANSIT LEVEL AND NOT TO MOVE THE TRIPOD OR IT WILL GIVE YOU WRONG READINGS.

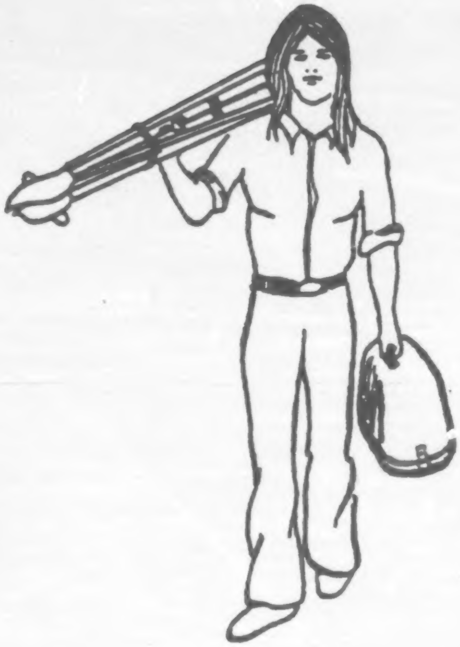
NOTE: A TRANSIT IS A VERY DELICATE TOOL. YOU MUST HANDLE IT CAREFULLY.



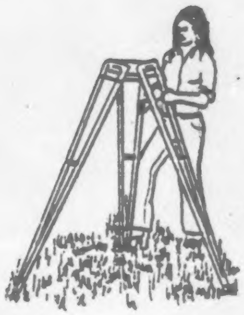
JOB STEPS

WORD GUIDE

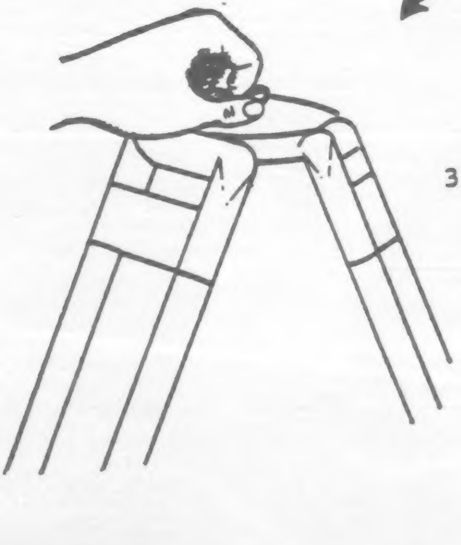
WING NUTS - METAL PIECES WITH WING-TYPE HANDLES.



1. GET EQUIPMENT AND TAKE IT TO AREA WHERE YOU WILL WORK.



2. SET UP TRIPOD SO THE TRANSIT IS AS LEVEL AS POSSIBLE.



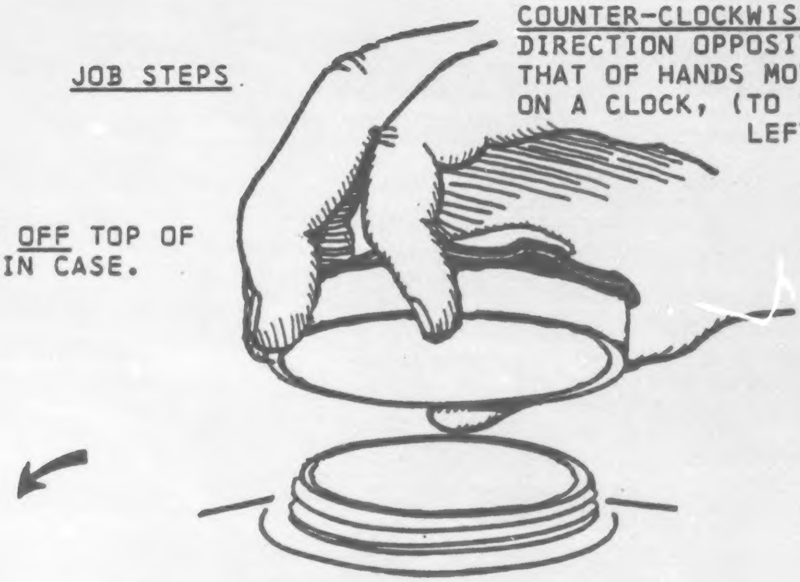
3. TIGHTEN THE WING NUTS AT TOP OF EACH LEG.

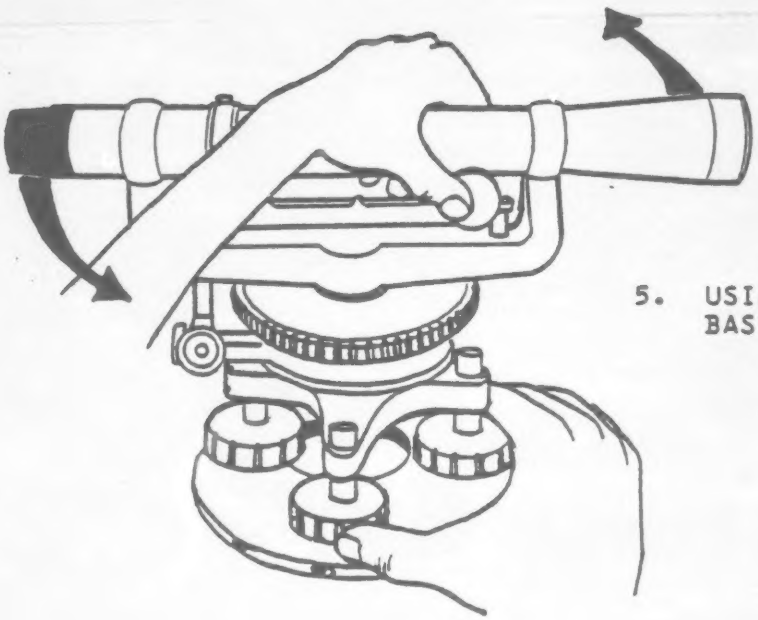
WORD GUIDE

COUNTER-CLOCKWISE - DIRECTION OPPOSITE THAT OF HANDS MOVING ON A CLOCK, (TO THE LEFT).

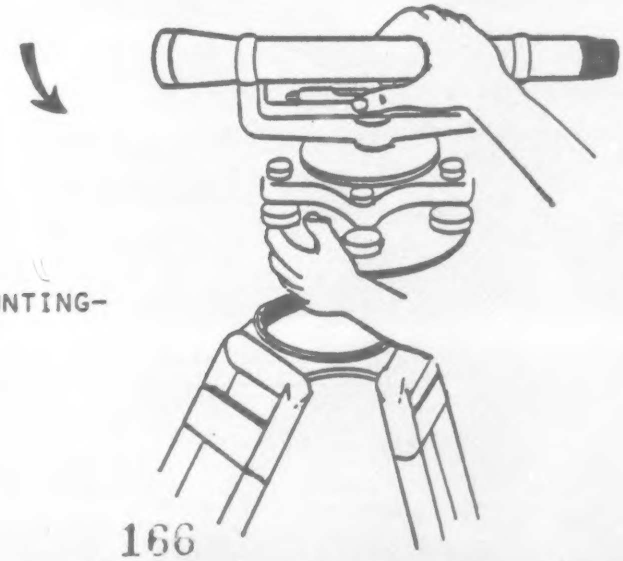
JOB STEPS

4. TAKE PLASTIC CAP OFF TOP OF TRIPOD. PUT IT IN CASE.





5. USING BOTH HANDS, TURN TRANSIT BASE COUNTER-CLOCKWISE FROM CASE.



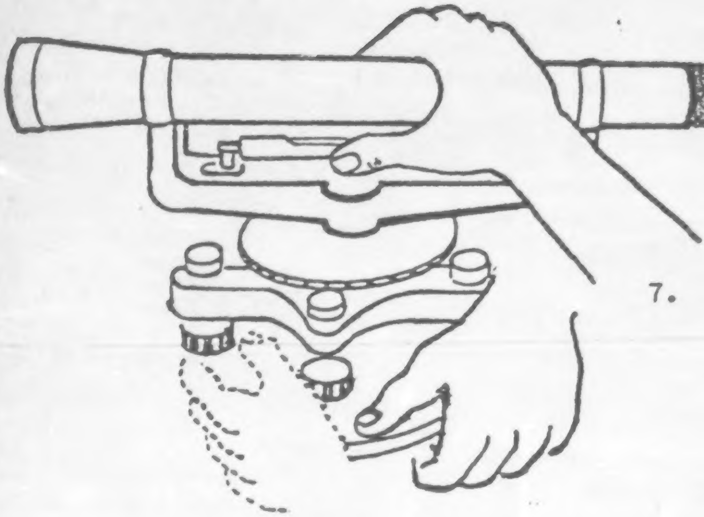
6. PLACE TRANSIT ON THE MOUNTING-SCREW ON TOP OF TRIPOD.

JOB STEPS

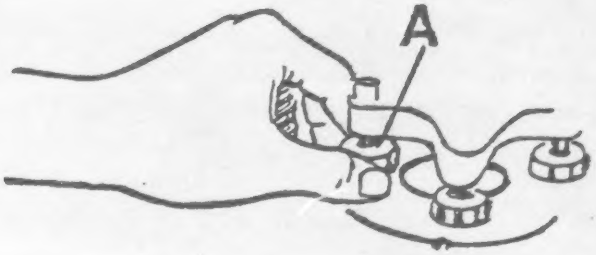
WORD GUIDE

CLOCKWISE - SAME DIRECTION AS HANDS MOVING ON A CLOCK (TO THE RIGHT).

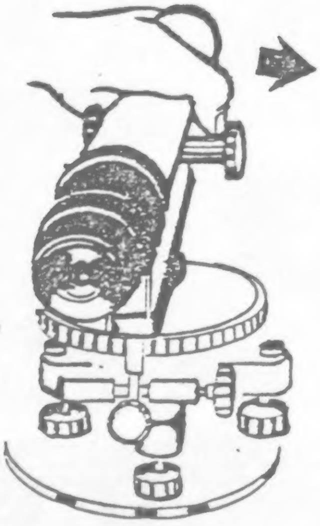
SIGHT BARREL - ROUND TUBE THROUGH WHICH YOU LOOK.



7. TURN TRANSIT CLOCKWISE TO TIGHTEN.

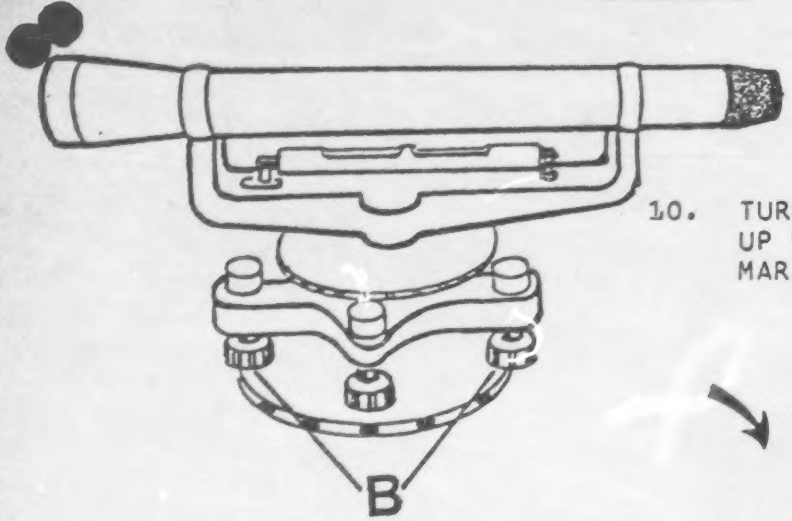


8. TURN THUMB-SCREW MARKED "A" COUNTER-CLOCKWISE.



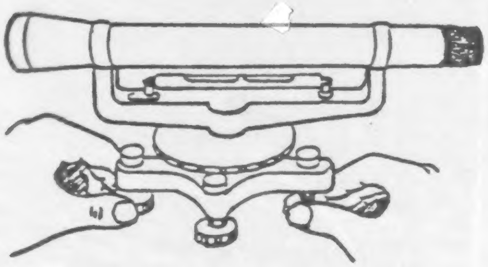
9. TURN THE SIGHT BARREL. THE SIGHT BARREL SHOULD TURN EASILY IN ANY DIRECTION.

JOB STEPS

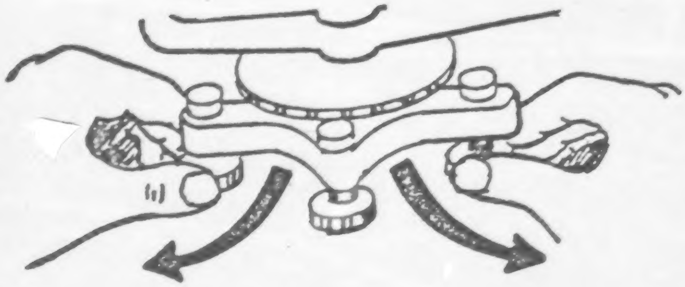


10. TURN SIGHT-BARREL SO IT LINES UP WITH THE 2 THUMB-SCREWS MARKED "B".

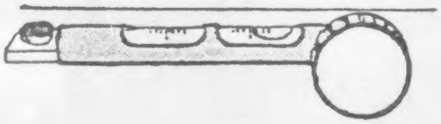
11. PUT ONE THUMB ON EACH "B" THUMB-SCREW.



12. TURN THUMB-SCREW IN YOUR LEFT HAND CLOCKWISE AND TURN THUMB-SCREW IN YOUR RIGHT HAND COUNTER-CLOCKWISE - AT THE SAME TIME.

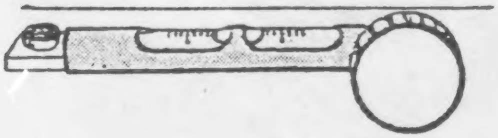


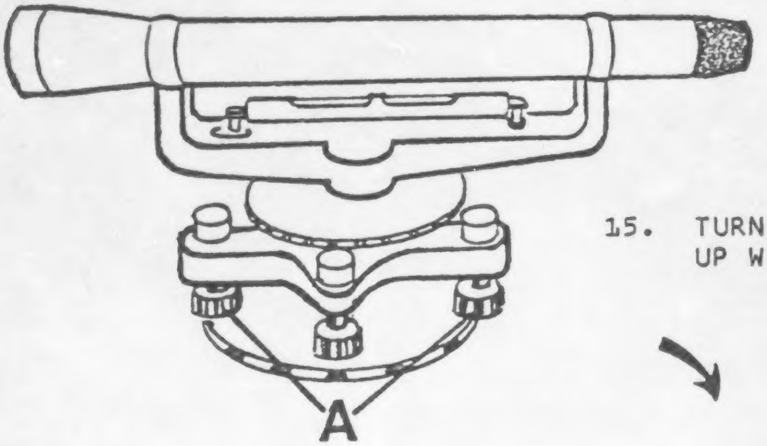
13. LOOK AT THE BUBBLE UNDER THE SIGHT BARREL.



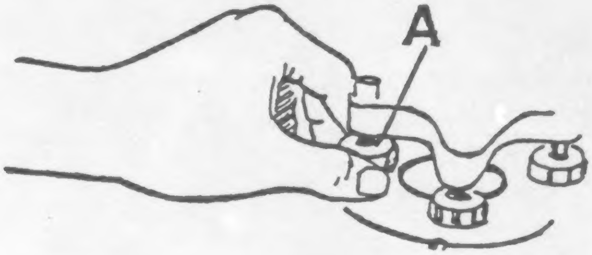
JOB STEPS

14. KEEP TURNING THE THUMB-SCREWS UNTIL THE BUBBLE IS BETWEEN THE 2 DOTS.

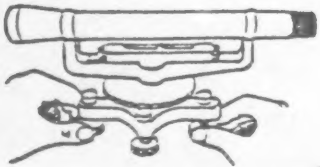


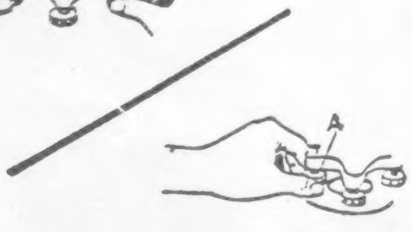


15. TURN SIGHT-BARREL AND LINE IT UP WITH THE OTHER 2 THUMB-SCREWS.



16. TURN THUMB-SCREWS AND LINE UP THE BUBBLE BETWEEN THE 2 DOTS.

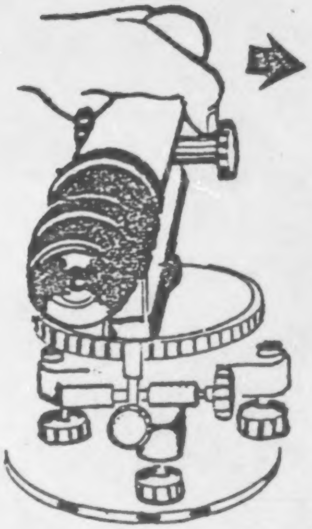


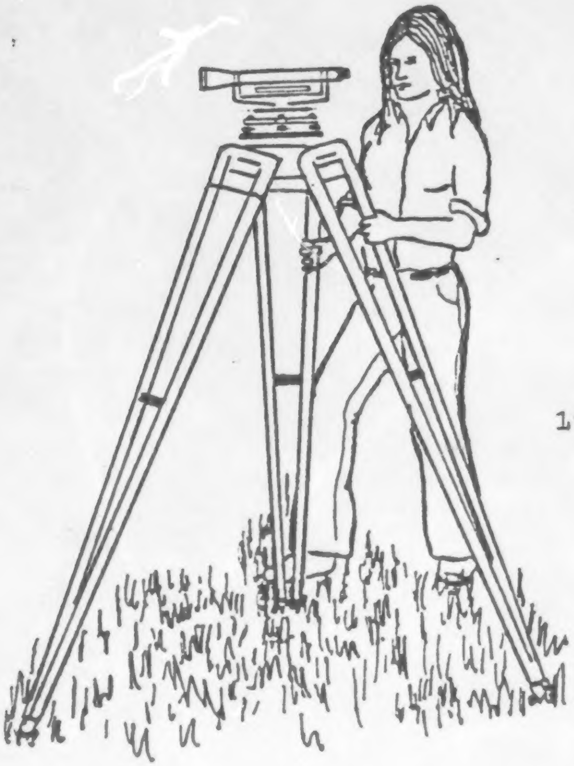


17. KEEP GOING FROM 1 SET OF THUMB-SCREWS TO THE OTHER SET. ADJUST THE BUBBLE EACH TIME.

JOB STEPS

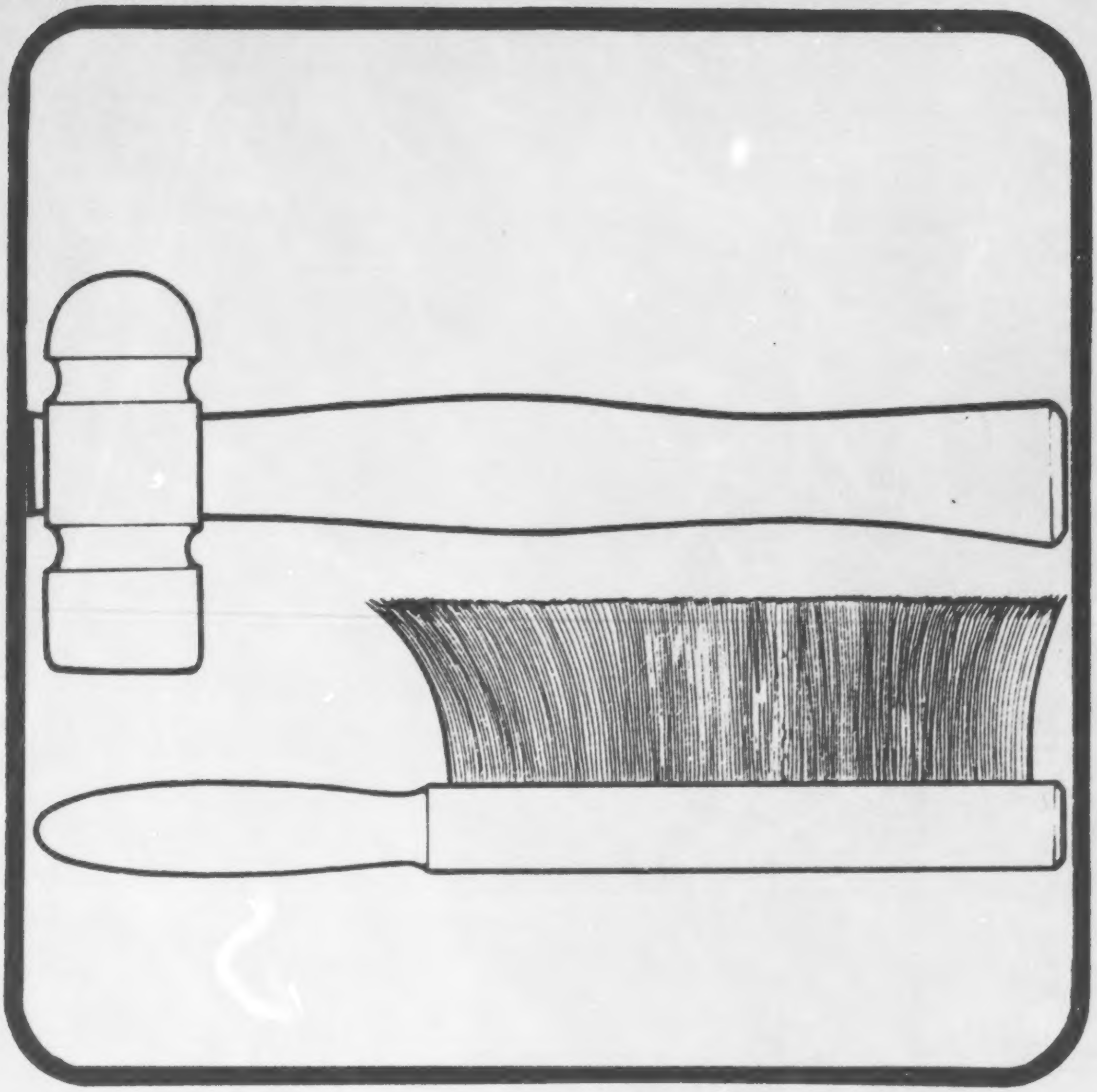
18. TURN SIGHT-BARREL ALL THE WAY AROUND. MAKE SURE BUBBLE IS BETWEEN DOTS.





19. ASK YOUR INSTRUCTOR TO CHECK TRANSIT FOR LEVEL SETTING.

20. RETURN ALL EQUIPMENT.



building maintenance & engineering

unit: GROUNDS

capital area career center

module: 2201 07 019 3 date: APRIL 1977 level:

skill title: EDGING A LAWN

developed & written by: DEBORAH J. LIVINGSTON-WHITE

visuals by: SANDRA GOSTOMSKI

WORD GUIDE

EDGE - TRIM GRASS ALONG LAWN AND SIDEWALK - WHERE THE GRASS AND SIDEWALK MEET.

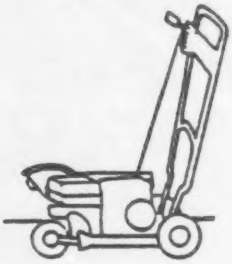
CLIPPING - CUT GRASS

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO EDGE A LAWN.

AND IN ORDER TO DO THIS YOU WILL NEED:

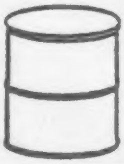


LAWN EDGER

PUSH BROOM

GASOLINE

FLAT SHOVEL

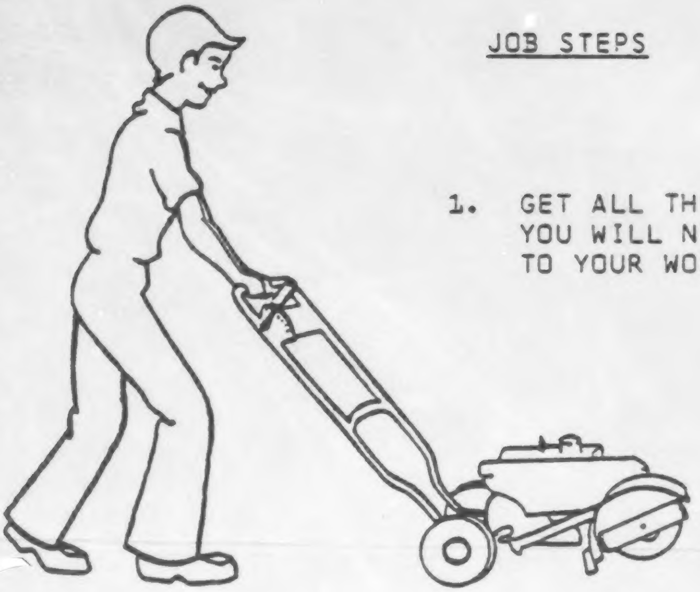


WASTE CAN

WE WILL KNOW YOU CAN DO IT WHEN:

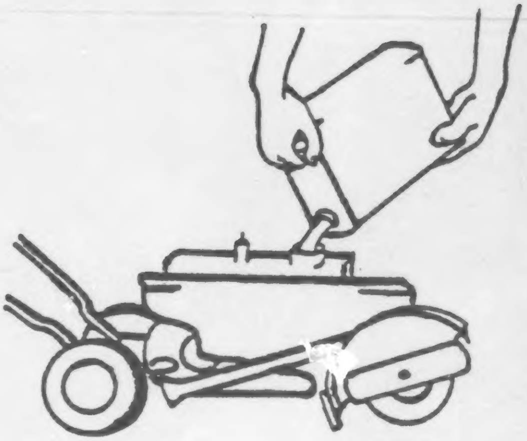
YOU HAVE DONE THE JOB STEPS AND THE SIDEWALK IS EDGED.

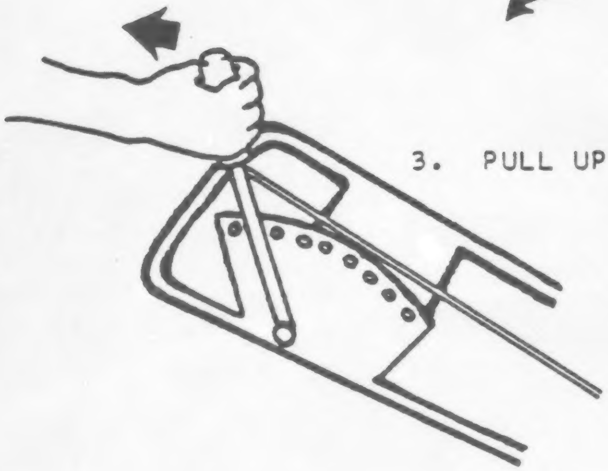
JOB STEPS



1. GET ALL THE EQUIPMENT YOU WILL NEED. TAKE IT TO YOUR WORK AREA.

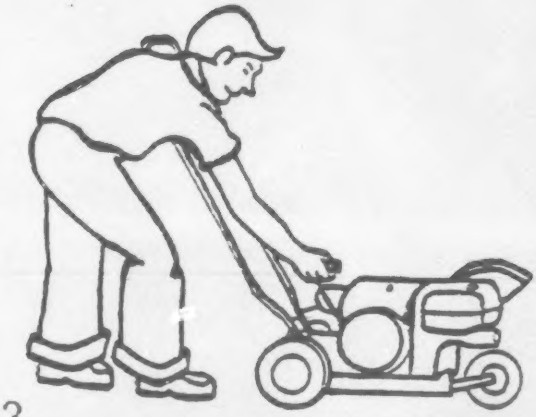
2. FILL GAS TANK WITH GASOLINE.





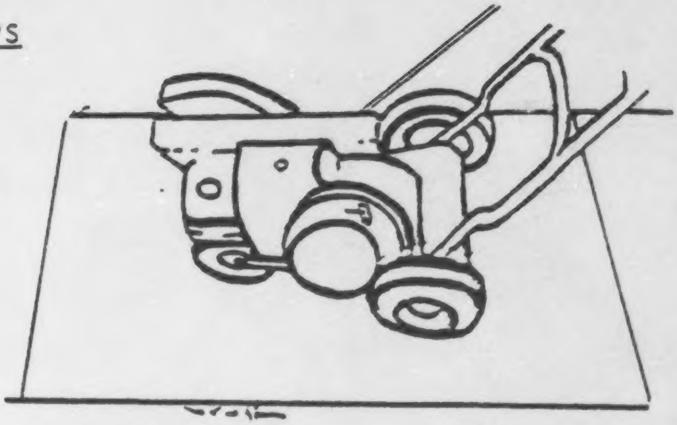
3. PULL UP LEVER ON HANDLE.

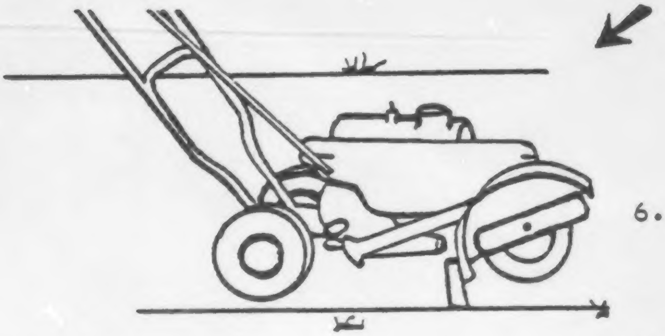
4. TO START ENGINE, PULL ROPE.



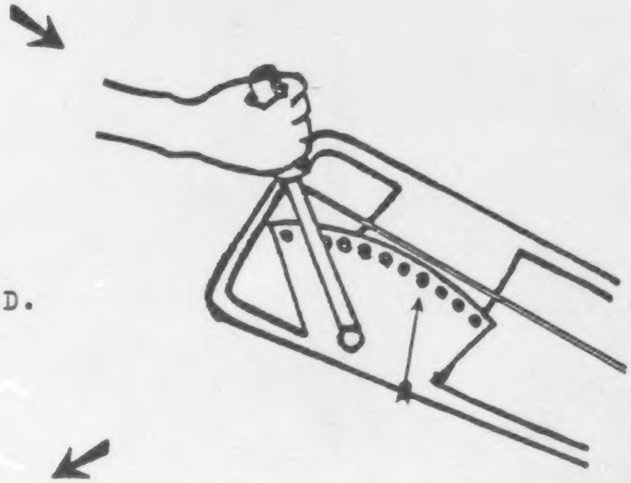
JOB STEPS

5. LINE UP EDGER SO THAT WHEELS ARE ON THE SIDEWALK.

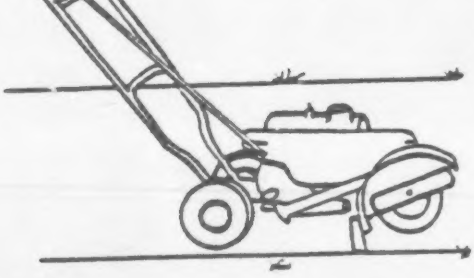




6. MOVE JUST A LITTLE SO THE GUIDE TOUCHES THE EDGE OF THE SIDEWALK.

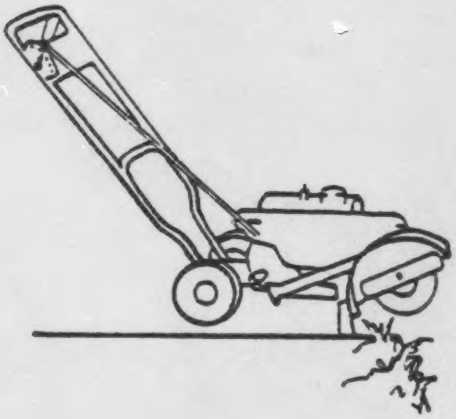


7. TO LOWER CUTTING BLADE, PULL LEVER TO THE LEFT. THEN, PUT LEVER IN 4TH HOLE FROM THE BOTTOM. SLOWLY PUSH EDGER FORWARD.

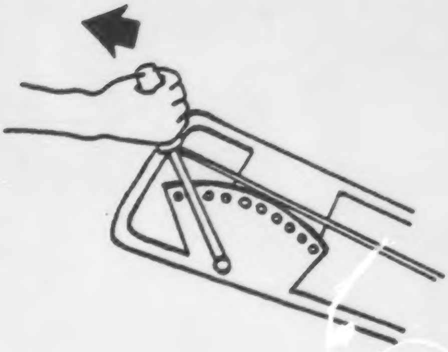


8. KEEP GUIDE ON THE EDGE OF THE SIDE WALK OR DRIVEWAY.

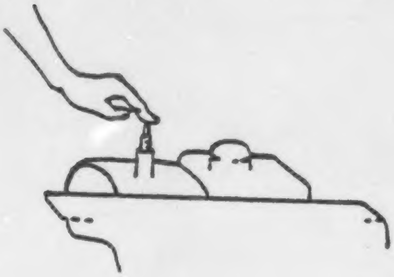
JOB STEPS



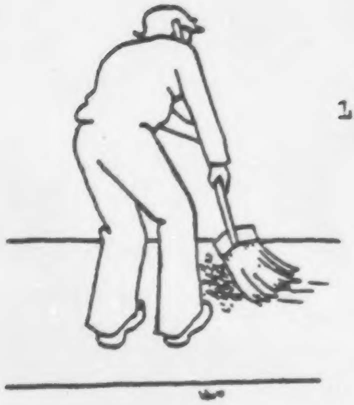
9. WHEN YOU COME TO A CROSS WALK - STOP! DO NOT LET THE CUTTER BLADE HIT THE SIDEWALK.



10. TO LIFT THE CUTTER BLADE, PULL THE LEVER UP. THEN, MOVE EDGER ONTO THE OTHER SIDE OF THE SIDEWALK.

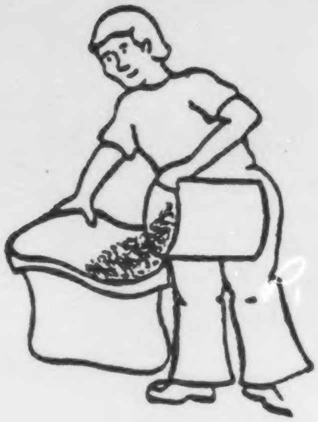


11. DO JOB STEPS 6, 7, 8, 9 AND 10 AGAIN. DO ALL EDGING NEEDED. STOP THE ENGINE.



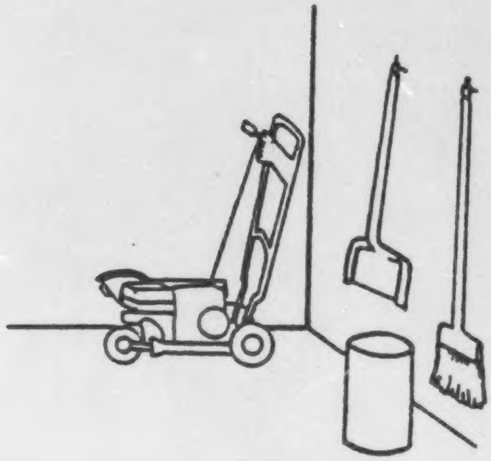
12. USING BROOM SWEEP CLIPPINGS INTO PILES. SWEEP PILES ONTO FLAT SHOVEL. PUT CLIPPINGS INTO WASTE CAN.

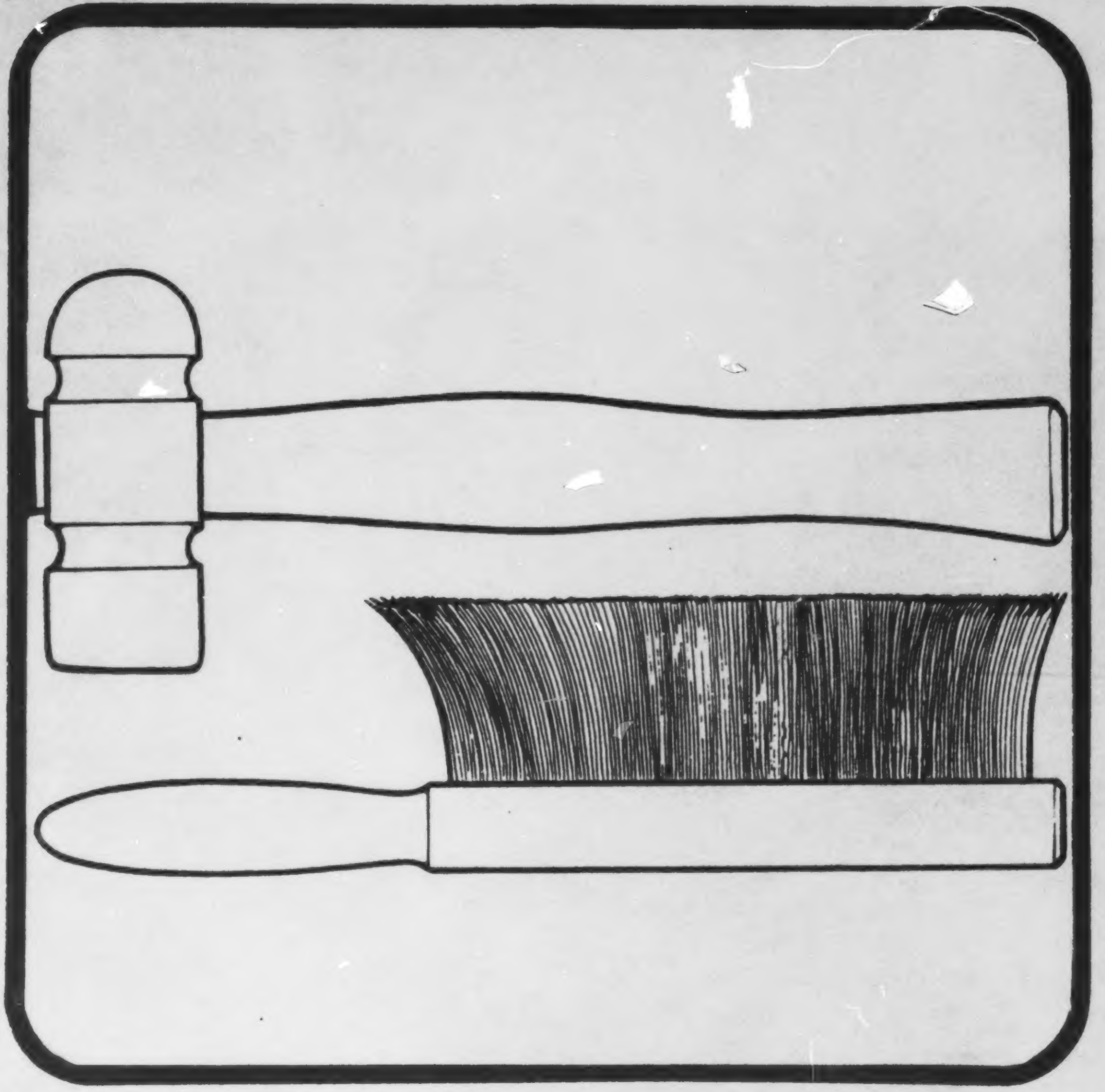
JOB STEPS



13. DUMP CLIPPINGS INTO PLASTIC BAGS. ASK YOUR INSTRUCTOR WHERE TO PUT THE PLASTIC BAGS.

14. PUT ALL OF YOUR EQUIPMENT AWAY.





building maintenance & engineering

unit: MAINTENANCE

capital area career center

module: 2201 08 001 3 **date:** JANUARY 1977 **level:** II

skill title: PICKING UP PAPERS AND TRASH

developed & written by: DWIGHT SMITH

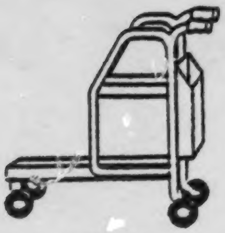
visuals by: DAVE WEHRWEIN

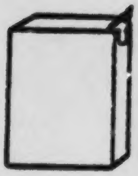
PERFORMANCE OBJECTIVE

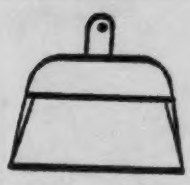
WHAT YOU ARE GOING TO LEARN:

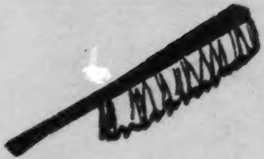
HOW TO PICK UP PAPERS AND TRASH.

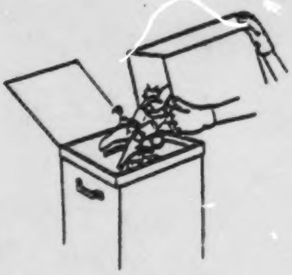
AND IN ORDER TO DO THIS YOU WILL NEED:

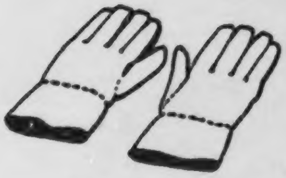

4 WHEEL
PUSH CART

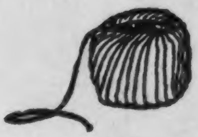

DETERGENT

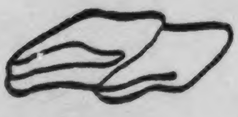

DUST PAN


DUST PAN
BRUSH


TRASH CAN FOR
TRASH THAT DOESN'T
BURN


GLOVES


TWINE


WIPING CLOTHS

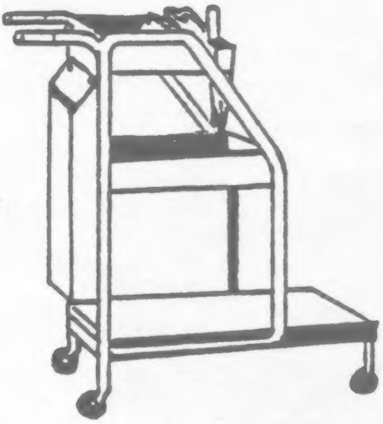
TRASH BAG LINERS

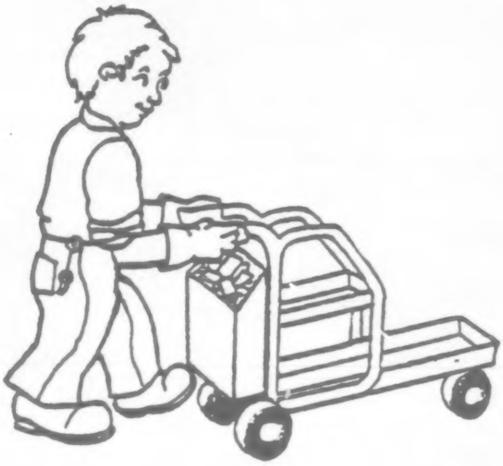
WE WILL KNOW YOU CAN DO IT WHEN:

THERE IS NO TRASH IN THE BUILDING OR AREA YOU HAVE WORKED IN.

JOB STEPS

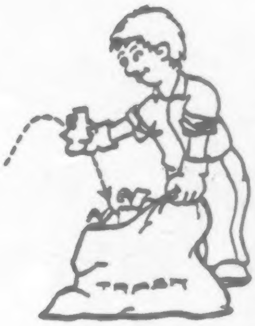
1. GET ALL THE EQUIPMENT YOU WILL NEED.





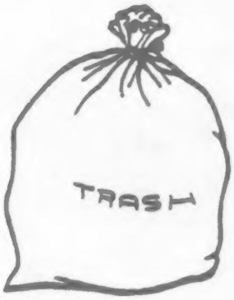
2. TAKE IT TO THE PLACE YOU WILL PICK UP PAPERS AND TRASH.

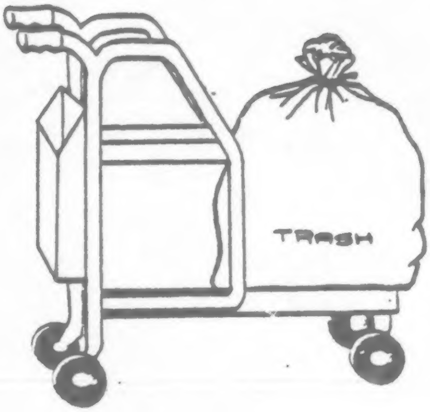
3. PICK UP ALL TRASH IN TRASH BAGS.



JOB STEPS

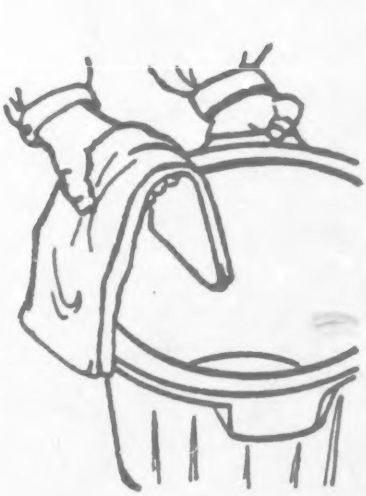
4. TIE EACH BAG WITH TWINE.





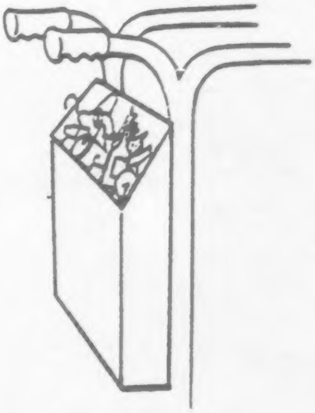
5. PUT THE TIED BAG ON THE PUSH CART.

6. PUT A NEW TRASH BAG LINER IN EACH WASTE BASKET.

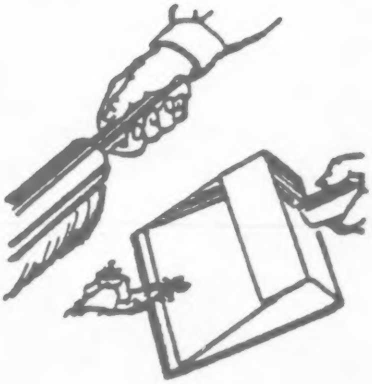


JOB STEPS

7. PICK UP ALL TRASH THAT DOESN'T BURN (GLASS, METAL). PUT IT IN THE TRASH CAN ON THE PUSH CART.

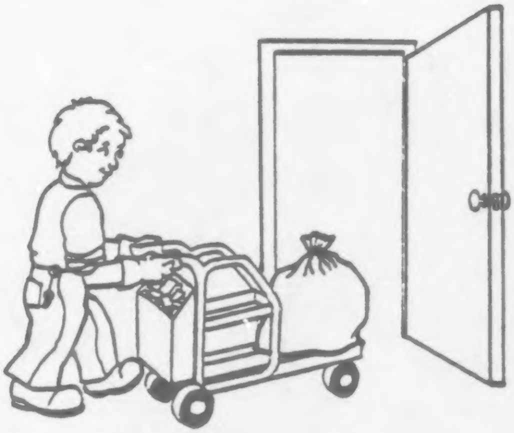


CAUTION: ALWAYS WEAR GLOVES. BE CAREFUL OF BROKEN GLASS. DO NOT TAKE THE PUSH CART INTO OFFICES.



8. PICK UP ALL TRASH YOU SPILLED. USE THE DUST PAN AND THE DUST PAN BRUSH.

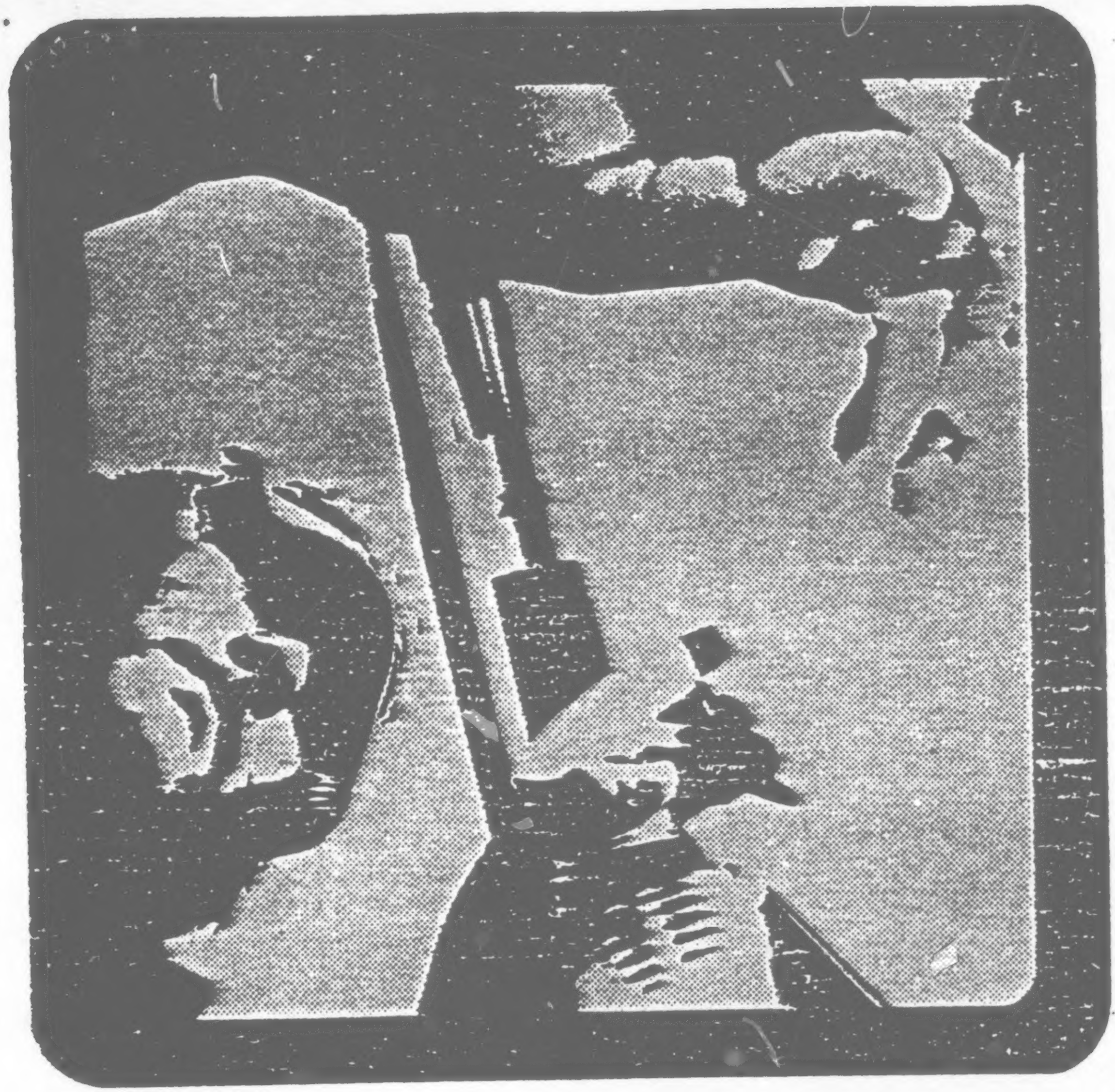
9. TAKE THE TRASH AND EQUIPMENT TO THE TRASH ROOM.



JOB STEPS

10. ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

GOOD WORK! YOU HAVE COMPLETED THE JOB STEPS FOR PICKING UP PAPERS AND TRASH.



building maintenance & engineering

unit: MAINTENANCE

capital area career center

module: 2201 08 002 3 date: 1-21-77 level: 2

skill title: PAPER AND TRASH DISPOSAL

developed & written by: DWIGHT SMITH

visuals by: DAVE WEHRWEIN

WORD GUIDE

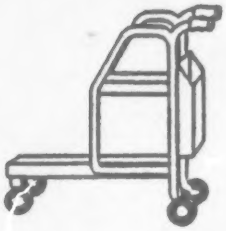
DISPOSE - TO GET RID OF OR THROW OUT.

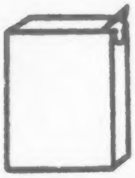
PERFORMANCE OBJECTIVE

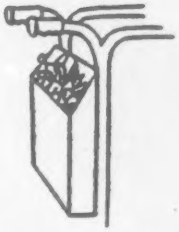
WHAT YOU ARE GOING TO LEARN:

HOW TO DISPOSE OF TRASH AND PAPERS THAT HAVE BEEN COLLECTED.

AND IN ORDER TO DO THIS YOU WILL NEED:

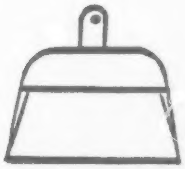

4 WHEEL PUSH CART


DETERGENT


CONTAINER FOR TRASH THAT WON'T BURN

TWINE

WIPING CLOTHS


DUST PAN

DUST PAN BRUSH

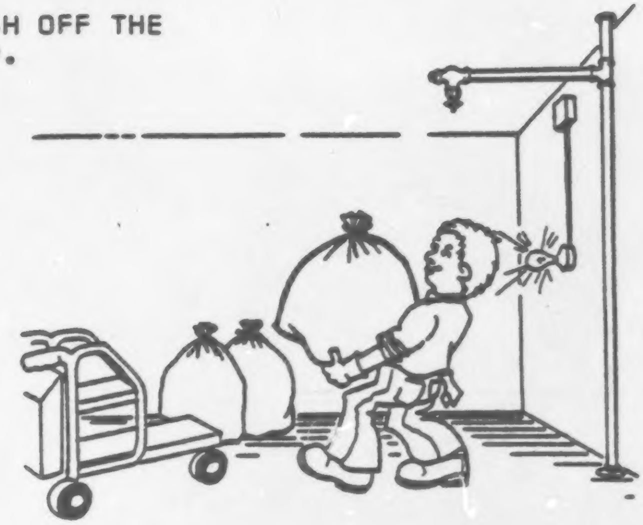
GLOVES

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE DISPOSED OF THE TRASH AND RETURNED ALL EQUIPMENT.

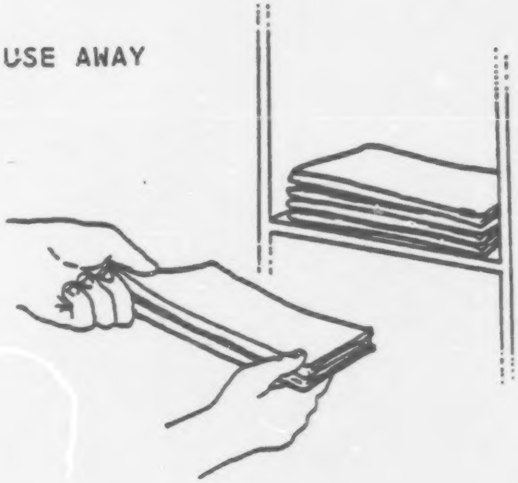
JOB STEPS

1. TAKE THE BAGGED TRASH OFF THE CART AND STACK IT UP.



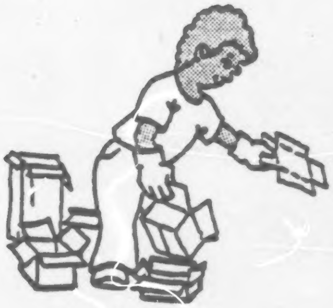
CAUTION: STACK THE BAGS AT LEAST 2 FEET FROM PIPES, LIGHTS AND SPRINKLERS.

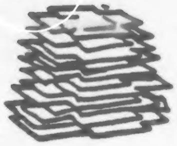
2. PUT TRASH BAGS YOU DID NOT USE AWAY IN THEIR PROPER SPOT.



JOB STEPS

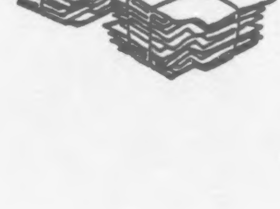
3. BREAK APART ALL CARDBOARD BOXES.





4. STACK THEM UP IN THE TRASH ROOM.

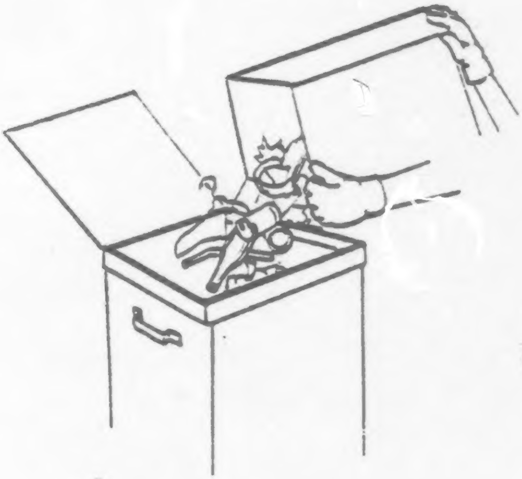
5. TIE THE FLAT BOXES TIGHTLY WITH TWINE.



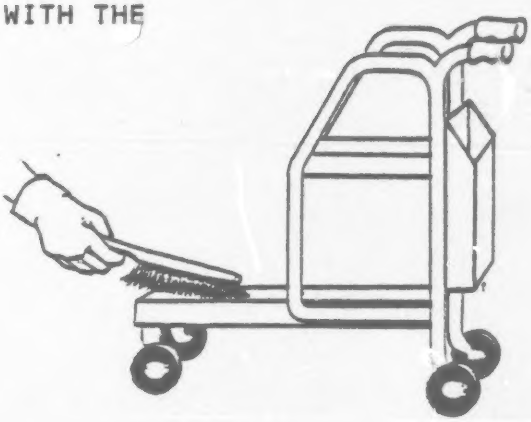
JOB STEPS WORD GUIDE

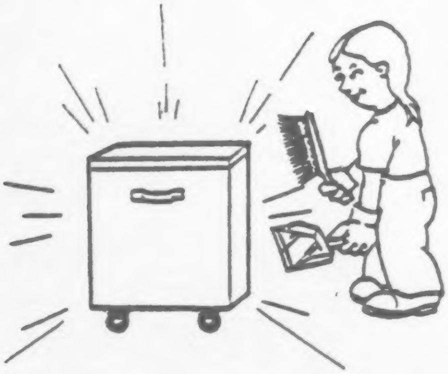
NONCOMBUSTIBLE - WILL NOT BURN.

6. EMPTY THE TRASH THAT WON'T BURN INTO THE RIGHT PLACE.



7. SWEEP OUT THE PUSH CART WITH THE DUST PAN BRUSH.

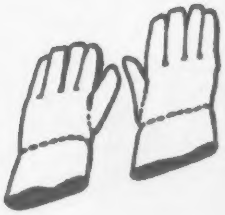


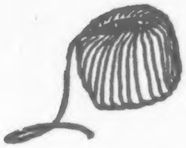


8. CLEAN THE DUST PAN, THE DUST PAN BRUSH AND THE NONCOMBUSTIBLE TRASH CONTAINER. PUT THEM AWAY IN THE STORAGE AREA.

JOB STEPS

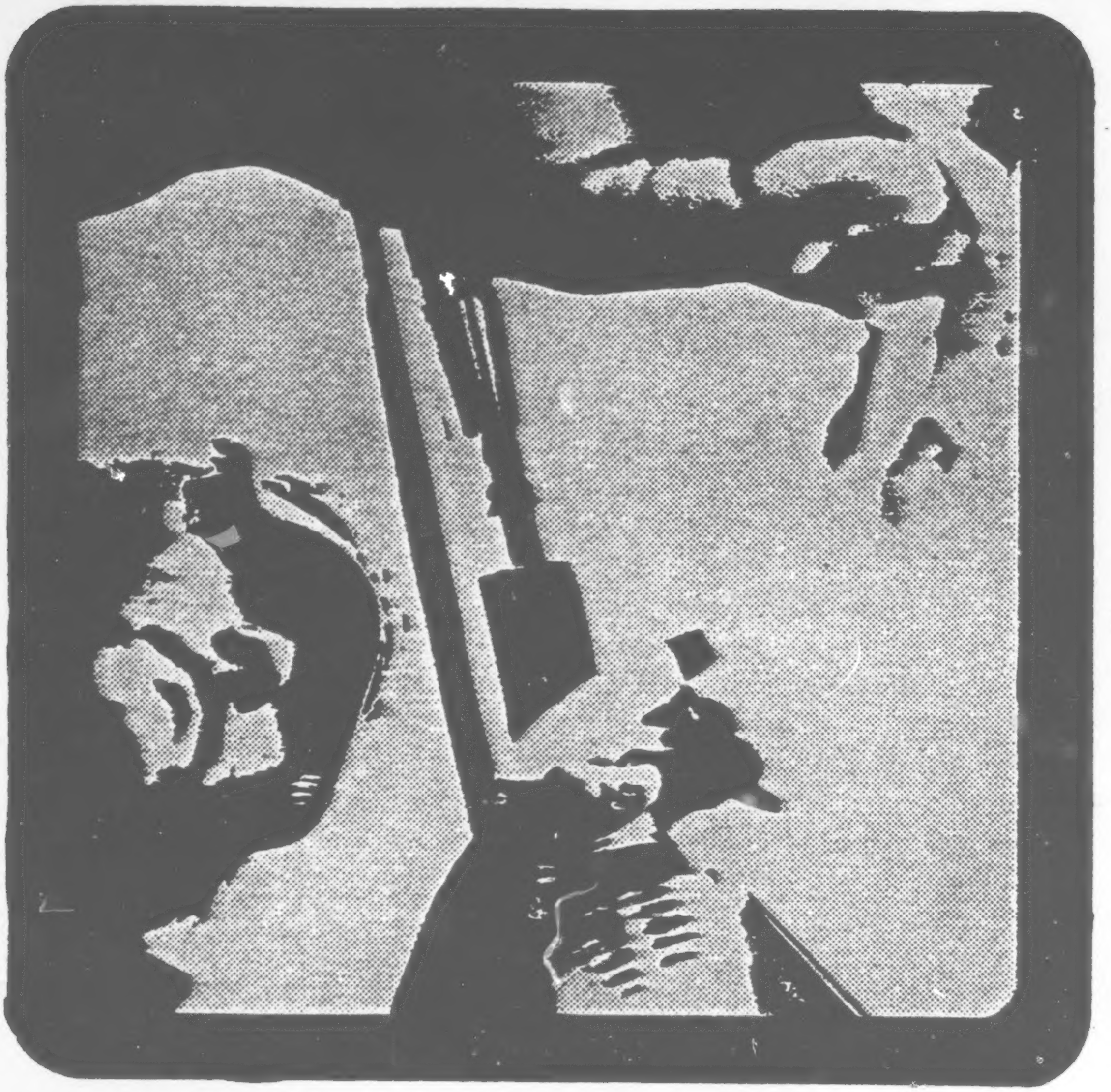
9. DUST OFF THE GLOVES AND PUT THEM AWAY.





10. PUT THE BALL OF TWINE AWAY.

11. GOOD JOB! YOUR INSTRUCTOR WILL CHECK YOUR WORK NOW.



building maintenance & engineering

unit: STEAM BOILER MAINTENANCE & OPERATION

capital area career center

module: 2201 10 001 3 date: 5/77 level:

skill title: FIRE LOW PRESSURE STEAM BOILER

developed & written by: DEBORAH J. WHITE

visuals by: SANDRA STARNAMAN

WORD GUIDE

FIRE - TO LIGHT A BOILER.

LIMIT PRESSURE - THE MOST PRESSURE THE BOILER CAN TAKE.

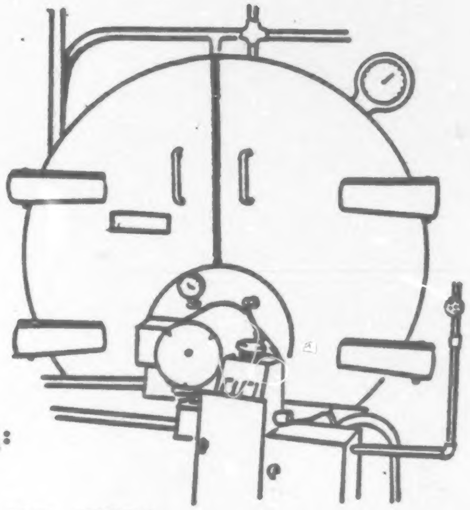
PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO SAFELY FIRE A LOW-PRESSURE STEAM BOILER.

AND IN ORDER TO DO THIS YOU WILL NEED:

A STEAM BOILER TO WORK ON



WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU HAVE COMPLETED THE JOB STEPS.
2. THE BOILER HAS REACHED ITS LIMIT PRESSURE, THREE TIMES.

WORD GUIDE

PSI - A PRESSURE OR FORCE. IT MEANS POUNDS PER SQUARE INCH. YOUR WATER PRESSURE IN YOUR HOUSE IS ABOUT 30 PSI, OR 30 POUNDS PER SQUARE INCH.

SEALED - NOT OPEN TO THE AIR OUTSIDE, CLOSED-OFF.

EFFECTIVE - BEST-WORKING.

INFORMATION

WHAT IS A STEAM BOILER?

IT IS A SEALED UNIT WHERE WATER IS HEATED TO MAKE HEAT OR ENERGY.

WHAT TYPES OF STEAM BOILERS ARE THERE?

TWO BASIC TYPES: A LOW PRESSURE BOILER (BELOW 15 PSI).
A HIGH PRESSURE BOILER (ABOVE 15 PSI).

THE LOW PRESSURE IS THE MOST COMMON IN SCHOOLS, HOSPITALS, AND SMALL INDUSTRY.

WHAT FUELS ARE USED?

COAL - USUALLY IN AN OLD-STYLE BOILER.

OIL - USUALLY WHERE THERE IS NO NATURAL GAS.

NATURAL GAS - THE MOST EFFECTIVE AND POPULAR.

NUCLEAR - MOSTLY IN ELECTRICAL GENERATING PLANTS.

CAN FIRING A BOILER BE DANGEROUS?

YES, YOU MUST BE THINKING AT ALL TIMES. IF YOU'RE WORKING IN A BUILDING WITH MANY PEOPLE IN IT, YOU ARE RESPONSIBLE FOR THEIR SAFETY AND YOURS.

WHAT SAFETY POINTS MUST YOU BE THINKING ABOUT?

YOU MUST KNOW WHERE THE BOILER GAS SUPPLY VALVE IS LOCATED.

IF ANYTHING DOES NOT SEEM RIGHT, SHUT OFF THE GAS SUPPLY VALVE AND GET HELP FROM AN EXPERT.

INFORMATION

WHAT COULD GO WRONG?

1. THE BOILER MAY NOT HAVE WATER IN IT AND IT COULD GET VERY HOT AND START A FIRE.
2. AFTER THE BOILER REACHES ITS PRESSURE LIMIT, IT SHOULD STOP FIRING UNTIL THE STEAM PRESSURE IS TOO LOW. IF THE PRESSURE EVER GOES ABOVE 10 PSI, SHUT OFF THE GAS SUPPLY VALVE AND GET EXPERT HELP.
3. THE BOILER MAY BE MAKING LOUD CRACKING SOUNDS OR ROCKING SLIGHTLY ON THE FLOOR. IF IT DOES EITHER, SHUT OFF THE GAS SUPPLY VALVE AND GET EXPERT HELP.

NOW DO:

WHAT WILL YOU DO IF THE BOILER PRESSURE GAUGE IS READING 12 PSI?

A. SHUT OFF GAS SUPPLY VALVE

B. WAIT AWHILE

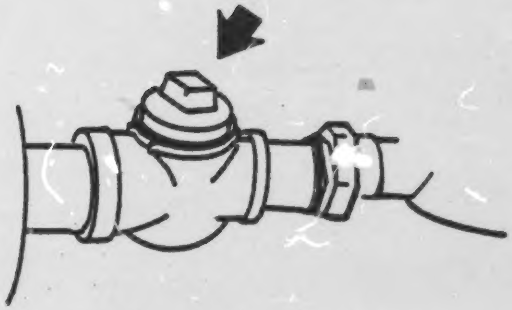
C. PANIC

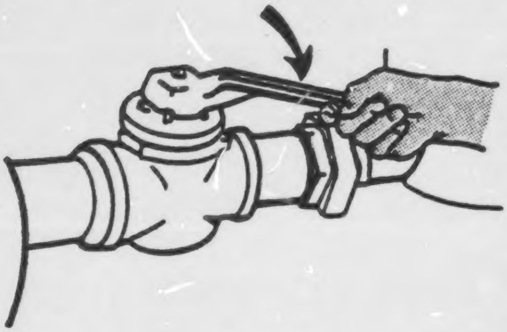
D. MAKE EVERYONE LEAVE

I HOPE YOU PICKED A. REMEMBER: IF ANYTHING DOES NOT SEEM RIGHT, DO NOT BE AFRAID TO ASK FOR EXPERT HELP.

JOB STEPS

1. FIND THE GAS SUPPLY VALVE (IT SHOULD BE ALONG THE FRONT OF THE BOILER).

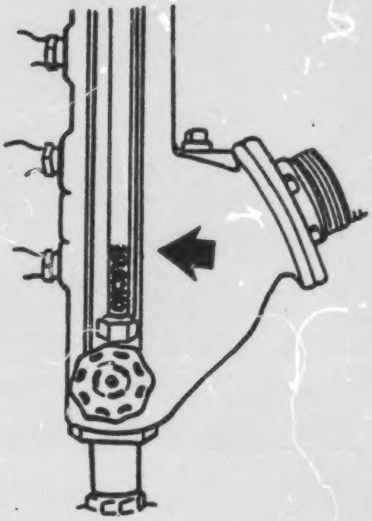


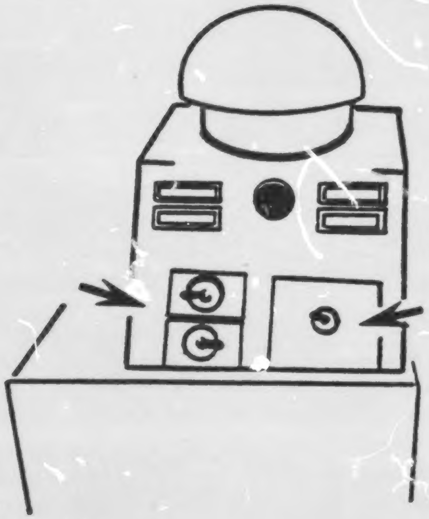


2. STOP--REMEMBER ITS PLACE. TURN OFF THE VALVE.

NOTE: THE LEVER ON THE GAS VALVE SHOULD POINT AWAY FROM THE GAS LINE AT A 90° ANGLE.

3. CHECK THE WATER LEVEL IN THE SIGHT GLASS ON THE UPPER PART OF THE BOILER. NOTICE THE WATER LEVEL. IT SHOULD BE ABOUT 1/3 OF THE WAY UP THE GLASS.

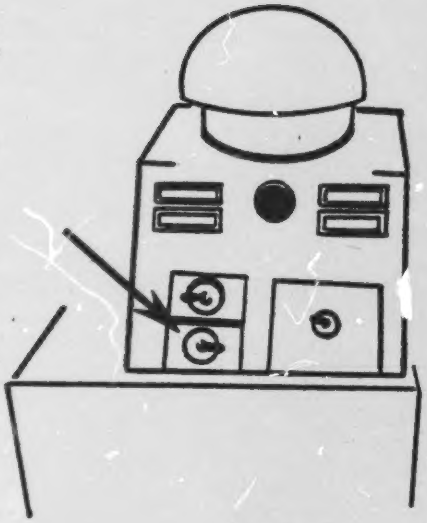


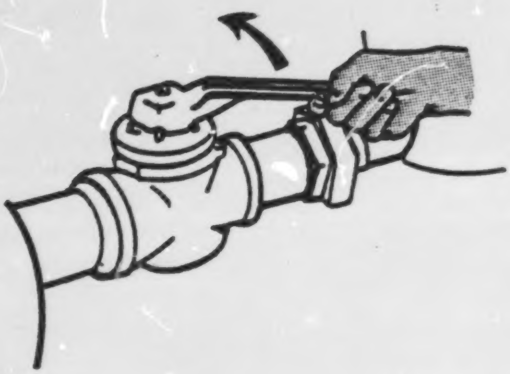


4. TURN ALL SWITCHES OFF. SWITCHES ARE ON THE BOILER CONTROL PANEL IN THE LOWER FRONT OF THE BOILER.

JOB STEPS

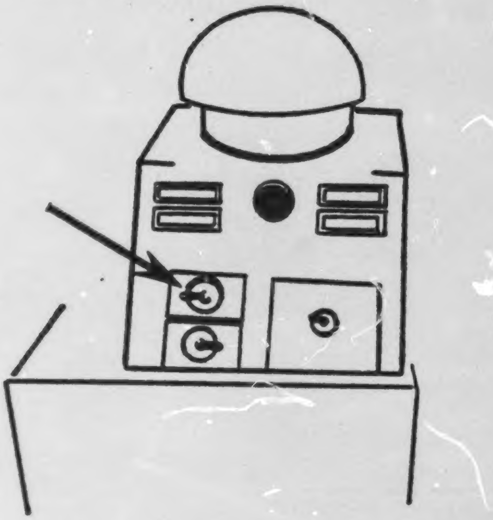
5. IF YOUR BOILER HAS A SWITCH THAT SAYS "LOW FIRE" AND "HIGH FIRE", TURN IT TO "LOW FIRE".

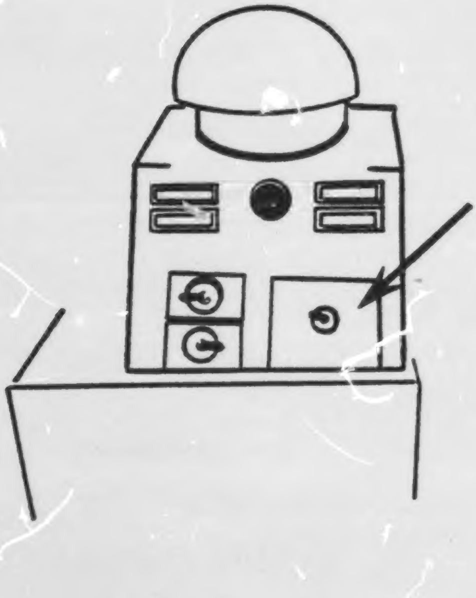




6. TURN ON THE GAS SUPPLY VALVE. NOTICE THAT WHEN A GAS VALVE IN ON, IT RUNS THE SAME WAY AS THE PIPE.

7. TURN ON CONTROL SWITCH.

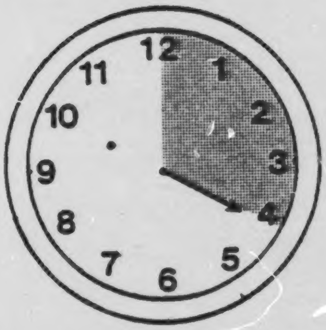


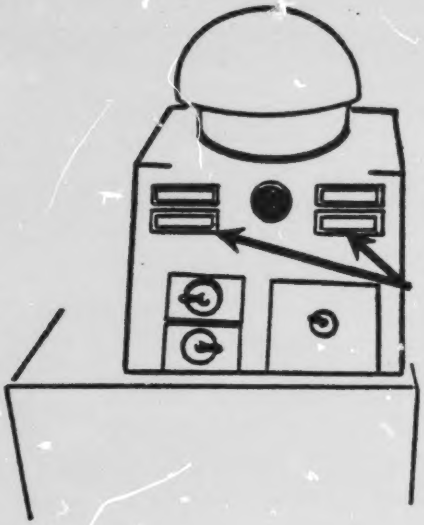


8. TURN ON THE BURNER (OR IGNITION) SWITCH. A FAN WILL COME ON IN FRONT OF THE BOILER.

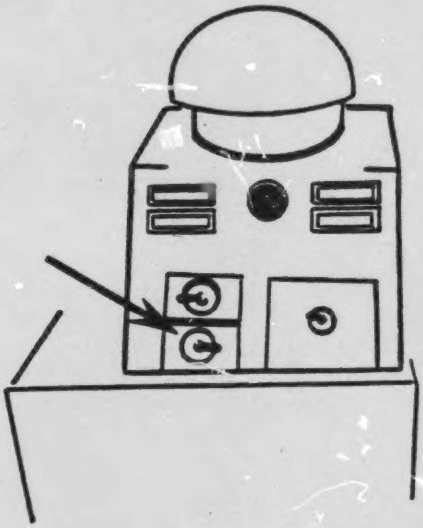
JOB STEPS

9. WAIT 20-30 SECONDS. THE BOILER SHOULD NOW BE FIRED. IF "FLAME FAILURE" LIGHT OR "LOW WATER" LIGHT IS ON, TURN OFF BURNER SWITCH, SHUT OFF GAS VALVE AND GO FOR EXPERT HELP.

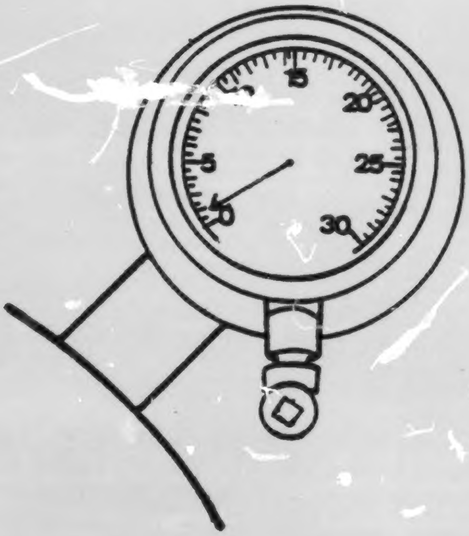




10. IF BOILER IS FIRED, WATCH FOR 15 MINUTES. IF "FLAME FAILURE" LIGHT OR "LOW WATER" LIGHT DO NOT COME ON, THE BOILER IS OPERATING.



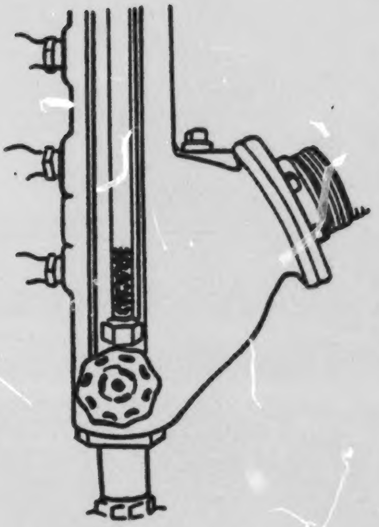
11. AFTER 15 MINUTES, IF YOUR BOILER HAS ONE, TURN "LOW FIRE" SWITCH TO "HIGH FIRE".

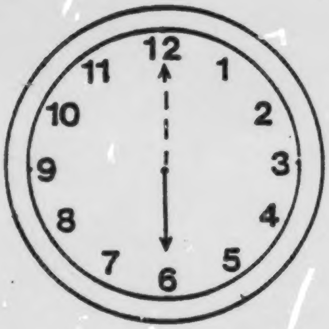


12. LOOK AT THE STEAM PRESSURE GAUGE ON THE TOP OR FRONT OF THE BOILER. REMEMBER THE READING. (IT WILL PROBABLY BE A LOW READING).

JOB STEPS

13. CHECK THE SIGHT GLASS. IT SHOULD BE IN ABOUT THE PLACE IT WAS WHEN WE STARTED, 1/3 UP ON THE GLASS. IS READING THE SAME AS IT WAS IN JOB STEP 3?

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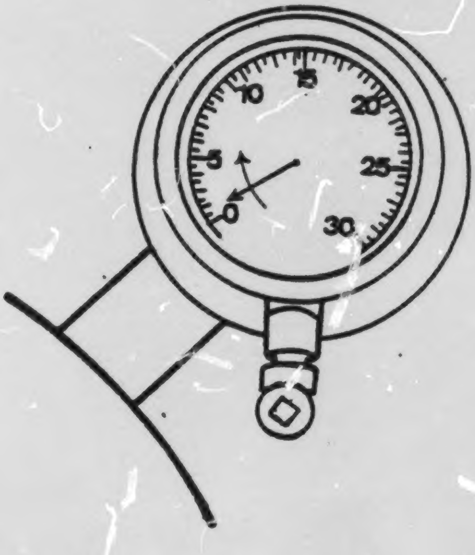
14. WAIT 30 MINUTES. WATCH AND LISTEN TO BOILER. DO THINGS SEEM TO BE WORKING WELL?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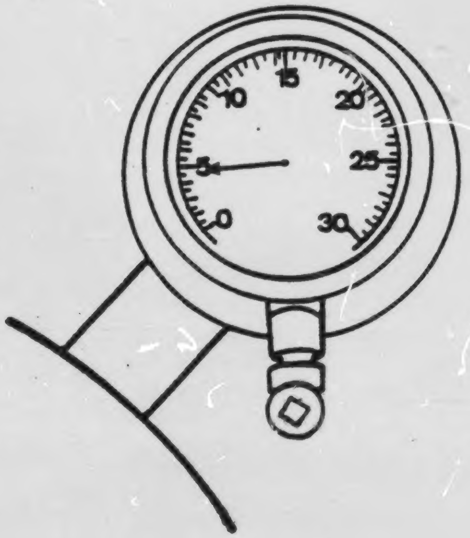
15. CHECK STEAM PRESSURE GAUGE. IT SHOULD BE MOVING UP.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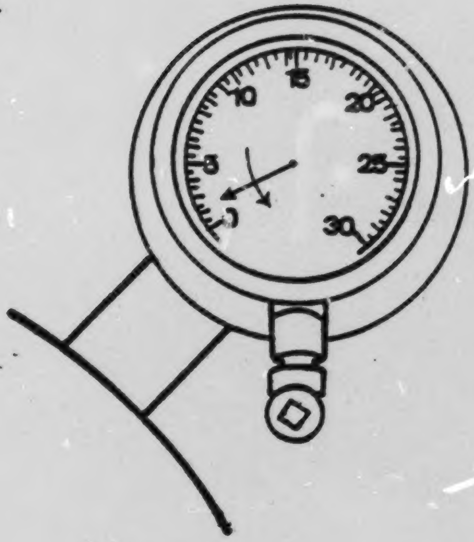
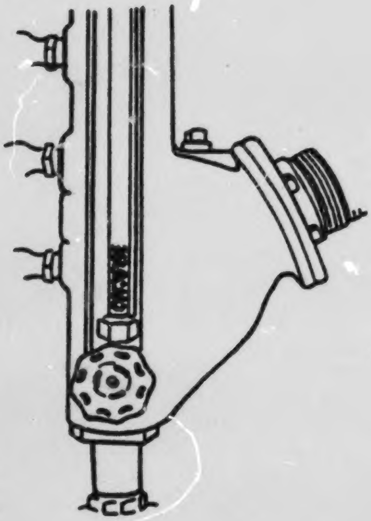
16. WAIT UNTIL THE BOILER SHUTS OFF. THE STEAM PRESSURE SHOULD BE BETWEEN 3 AND 7 PSI.

JOB STEPS



17. AFTER THE BOILER SHUTS OFF, WAIT FOR IT TO COME BACK ON. IT SHOULD COME ON AGAIN WHEN THE STEAM PRESSURE DROPS.

18. DO JOB STEPS 2 THROUGH 18 (THIS ON-OFF CYCLE) 2 MORE TIMES.



19. AFTER 3 HOURS, CHECK THE WATER LEVEL ON THE SIGHT GLASS AND THE PRESSURE GAUGE.

building maintenance & engineering

unit: STEAM BOILER MAINTENANCE AND OPERATION

capital area career center

module: 2201 10 002 3 date: 4/77 level: I

skill title: DETERMINE WATER LEVEL IN A STEAM BOILER

developed & written by: PATRICK KENNEDY

visuals by: SANDRA STARNAMAN 198

WORD GUIDE

GLASS SIGHT GAUGE - A WINDOW IN PIPE THAT SHOWS LEVEL OF WATER IN BOILER.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO FIND THE WATER LEVEL OF A STEAM BOILER BY USING A GLASS SIGHT GAUGE.

AND IN ORDER TO DO THIS YOU WILL NEED:

A STEAM BOILER

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN READ THE GLASS SIGHT GAUGE.

WORD GUIDE

SEALED - NOT OPEN TO THE AIR OUTSIDE.

EVAPORATION - WATER THAT MIXES WITH THE AIR INSIDE THE BOILER.

RADIATOR - THE HEATERS THAT SUPPLY HEAT TO EACH ROOM.

AUTOMATIC WATER FEED - ADDS WATER TO A BOILER BY ITSELF AS THE WATER DROPS.

INFORMATION

WHY DO WE NEED TO KNOW THE WATER LEVEL OF A BOILER?

TO KEEP IT RUNNING WELL. IF THE WATER IS TOO LOW, THE BOILER WILL STOP. THIS COULD BE AT NIGHT AND THE BUILDING COULD BECOME COLD.

HOW WOULD A BOILER LOSE WATER IF IT IS A SEALED UNIT?

EVEN THOUGH IT IS SEALED, A BOILER CAN LOSE WATER THROUGH EVAPORATION AND LEAKS IN RADIATORS AND PIPES.

IF THE WATER IS LOW, HOW IS MORE WATER PUT BACK INTO THE BOILER?

BY THE AUTOMATIC WATER FEED NEXT TO THE GLASS GAUGE.

NOTE: IT IS NOT GOOD TO KEEP ADDING FRESH WATER INTO A BOILER. IT ADDS TOO MANY MINERALS. IF YOUR AUTOMATIC WATER FEED IS RUNNING OFTEN, FIND OUT WHERE THE BOILER WATER IS LEAKING.

SHOULD THE WATER LEVEL CHANGE?

ONLY A LITTLE - IT MAY DROP 1 INCH WHEN THE BOILER JUST STARTS, OR RAISE SLIGHTLY WHEN THE BOILER IS NOT RUNNING.

THE WATER LEVEL WILL USUALLY BE ALONG THE SAME LINE AS MARKED ON THE AUTOMATIC WATER FEED.

INFORMATION

WHEN SHOULD WE CHECK THE WATER LEVEL?

EVERY DAY. YOU WOULD BE SMART TO CHECK IT EVERYTIME YOU WALK PAST THE BOILER.

NOW DO:

WHAT HAPPENS IF THE WATER LEVEL DROPS TOO LOW?

A. BOILER STOPS

B. BOILER RUNS FASTER

C. JUST THE FAN RUNS

D. FRESH WATER TURNS SALTY

HOPE YOU PICKED A.

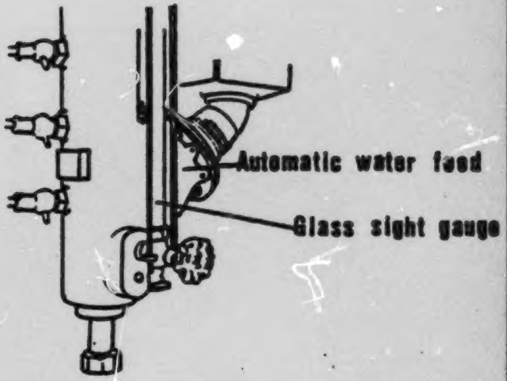
REMEMBER - IF THE AUTOMATIC WATER FEED QUITS WORKING AND THE WATER LEVEL DROPS TO A LOW LEVEL, THE BOILER WILL STOP. THIS IS A SAFETY DEVICE TO PREVENT OVERHEATING.

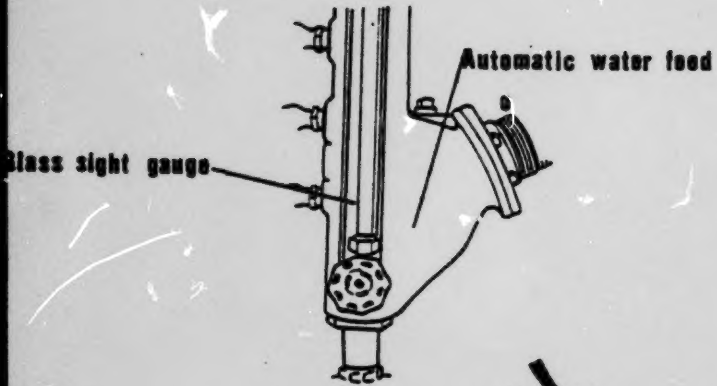
JOB STEPS

WORD GUIDE

OVERHEAT - GET TOO HOT.

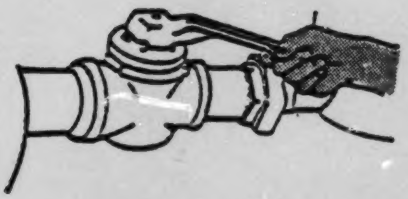
1. FIND THE GLASS SIGHT GAUGE AND THE AUTOMATIC WATER FEED ON THE UPPER FRONT OF THE BOILER.

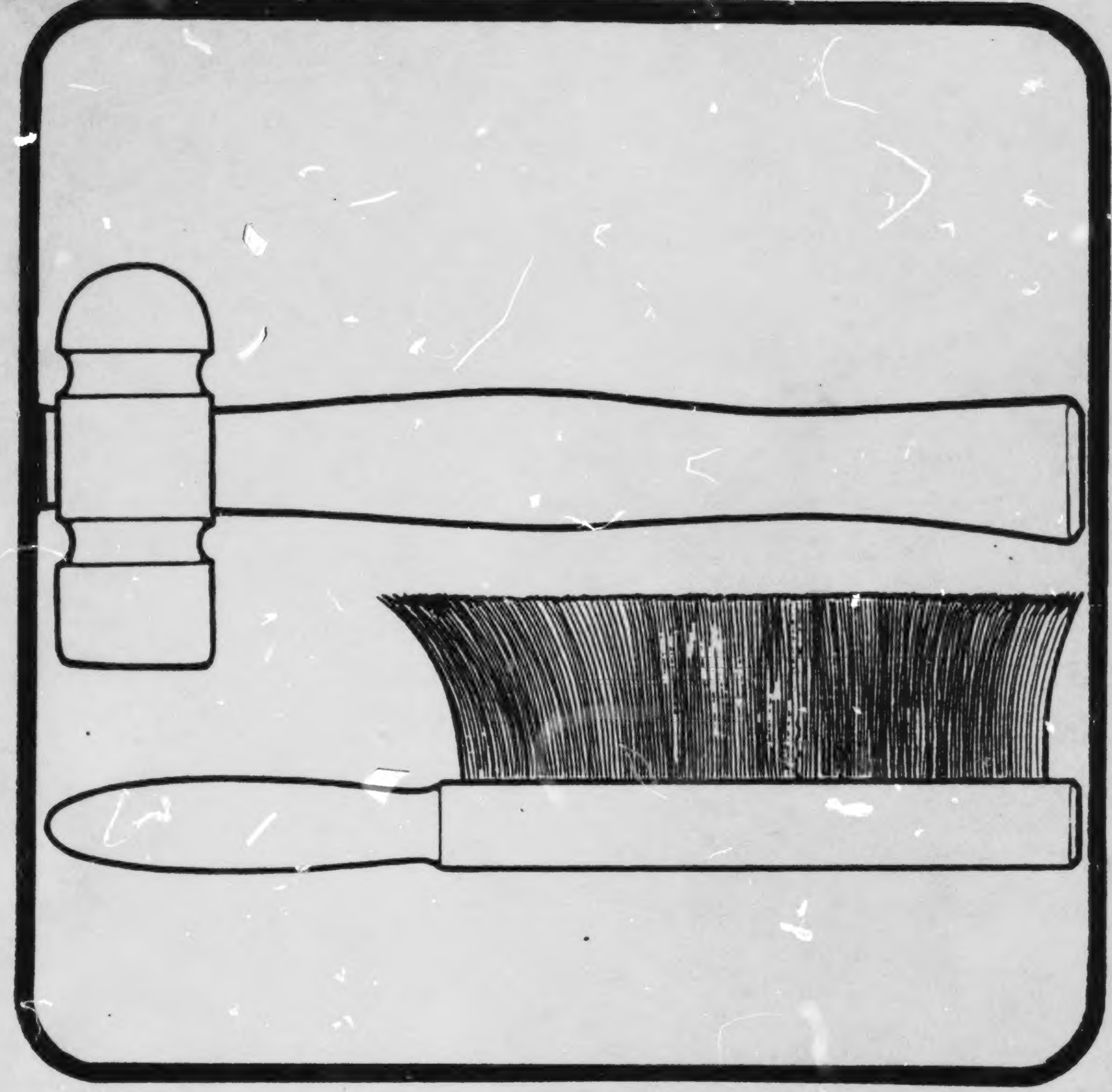

Automatic water feed
Glass sight gauge


Automatic water feed
lass sight gauge

2. LOOK AT THE LINE ON THE AUTOMATIC WATER FEED AND LINE IT UP TO THE GLASS SIGHT GAUGE. THE WATER LEVEL SHOULD BE ABOUT EVEN WITH THE LINE.

3. IF THE WATER LEVEL IS TOO LOW AND THE BOILER IS RUNNING, THE BOILER MAY OVERHEAT. TURN OFF THE GAS AND GET EXPERT HELP.





building maintenance & engineering

unit: STEAM BOILER MAINTENANCE & OPERATION

capital area career center

module: 2201 10 003 3 date: JANUARY 1977 level: I

skill title: BLOW DOWN A STEAM BOILER

developed & written by: JAMES F. SMALLEY

visuals by: SANDRA STARNAMAN

WORD GUIDE

SLUDGE - LITTLE PIECES OF DIRT FOUND IN WATER THAT MIX TO FORM MUD.

SCALE - SLUDGE THAT HAS BECOME VERY HARD.

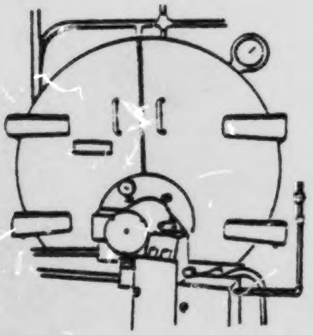
PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

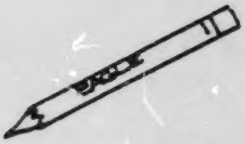
HOW TO BLOW-DOWN A STEAM BOILER TO REMOVE SLUDGE AND SCALE.

IN ORDER TO DO THIS YOU WILL NEED:

BOILER



PENCIL/CRAYON



WE WILL KNOW YOU CAN DO IT WHEN:

1. THE WATER IN THE BOTTOM OF THE BOILER IS FREE OF SLUDGE AND SCALE.
2. THE WATER IS AT THE RIGHT LEVEL.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

HERE ARE SOME QUESTIONS THAT YOU MIGHT HAVE AND ANSWERS TO HELP YOU OUT.

1. QUESTION: WHY DO YOU BLOW-DOWN A BOILER?

   ANSWER: BECAUSE AFTER A WHILE, SLUDGE AND SCALE BUILD UP ON THE INSIDE OF THE BOILER. IF IT ISN'T DRAINED, IT WILL GET HARD.

2. QUESTION: WHAT WOULD HAPPEN IF WE LET THE SLUDGE AND SCALE GET HARD?

   ANSWER: THE BOILER WOULD TAKE LONGER TO HEAT UP. THIS MEANS THAT IT WOULD COST EXTRA MONEY BECAUSE IT WOULD TAKE MORE FUEL TO HEAT IT UP.

3. QUESTION: HOW OFTEN SHOULD WE BLOW-DOWN A BOILER?

   ANSWER: ABOUT ONCE A WEEK.

4. QUESTION: WHAT DOES "BLOW-DOWN" MEAN?

   ANSWER: IT MEANS TO DRAIN OUT THE DIRTY AND SCALY WATER.

5. QUESTION: WHEN SHOULD YOU BLOW-DOWN A BOILER?

   ANSWER: THE BEST TIME IS IN THE MORNING BECAUSE THE BOILER DOES NOT RUN AS MUCH AT NIGHT. THIS MEANS THE SLUDGE AND SCALE DROP DOWN TO THE BOTTOM OF THE BOILER.

6. QUESTION: IS THERE DANGER WHEN YOU BLOW-DOWN A BOILER?

   ANSWER: THERE COULD BE. THE WATER YOU ARE DRAINING OFF FROM THE BOTTOM OF THE BOILER IS ABOUT 275° F. THIS IS HOTTER THAN BOILING WATER. BOILING WATER CAN BURN VERY BADLY. ALSO IF TOO MUCH WATER IS DRAINED FROM THE BOILER, THE BOILER WILL SHUT OFF. ANOTHER PROBLEM IS, IF THE BOILER KEEPS ON RUNNING, IT COULE BLOW UP WHEN IT GETS TOO HOT.

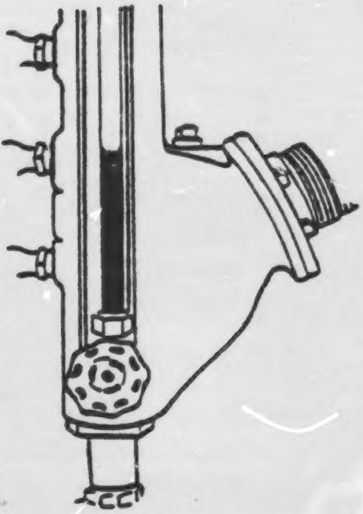
OK, NOW LET'S SEE HOW MUCH YOU KNOW. HOW OFTEN SHOULD WE BLOW DOWN A BOILER?

A. ONCE A MONTH, IF NEEDED
B. ONCE A WEEK, IF NEEDED
C. ONCE A DAY
D. NEVER, AS LONG AS IT RUNS

HOPE YOU PICKED "B". WE DO NOT WANT A BUILD UP OF SLUDGE & SCALE.

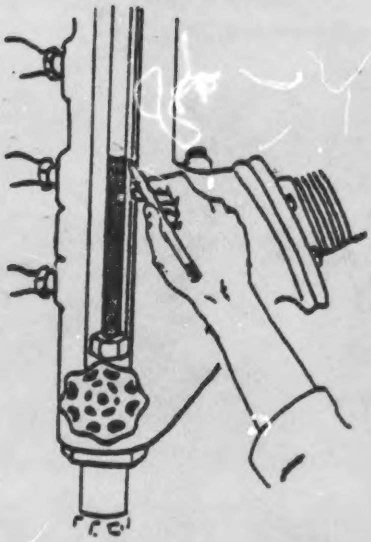
JOB STEPS

1. TAKE ALL EQUIPMENT TO YOUR WORK AREA.



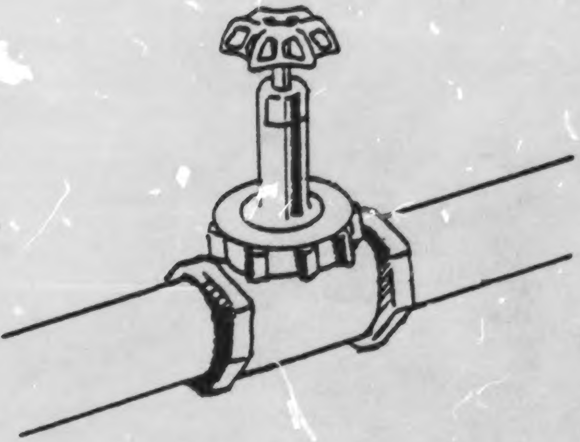
2. LOOK ON THE UPPER PART OF THE BOILER. YOU WILL SEE A SIGHT GLASS WITH WATER IN IT. IT WILL LOOK LIKE A FAT PENCIL. CHECK THE WATER LEVEL.

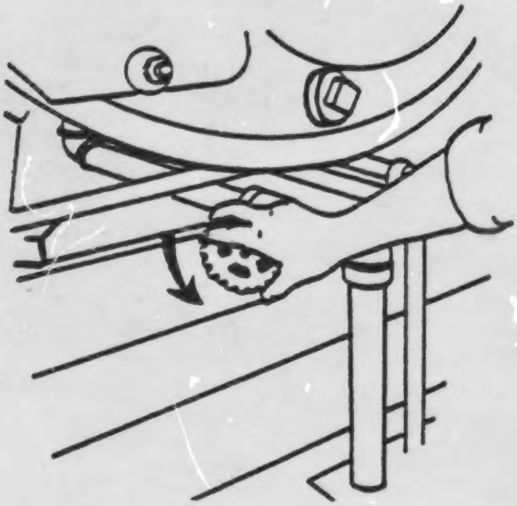
3. WITH A PENCIL OR CRAYON, MARK THE WATER LEVEL ON THE GLASS.



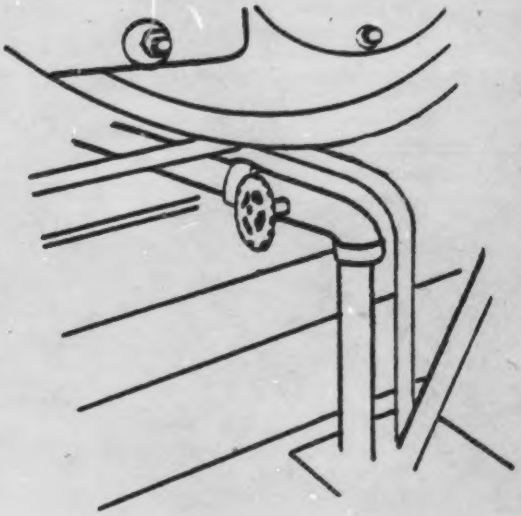
JOB STEPS

4. LOOK AT THE BOTTOM OF THE BOILER, EITHER FRONT, REAR OR TO THE SIDE. FIND THE BLOW-DOWN VALVES.





5. WHEN YOU FIND IT, TURN THE VALVE TO THE LEFT. OPEN THE VALVE ABOUT HALFWAY.



6. LEAVE THE VALVE OPEN UNTIL THE WATER CLEARS UP.

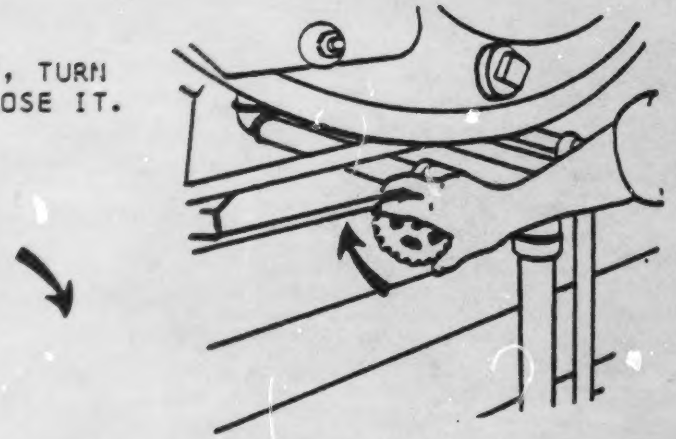
NOTE: THIS WILL NOT BE FOR MORE THAN A FEW MINUTES. THE WATER MAY BE YELLOW OR GREEN. THE SLUDGE AND SCALE IS USUALLY A BROWNISH COLOR.

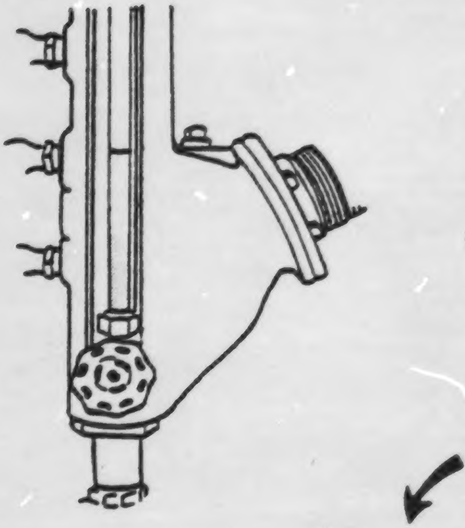
JOB STEPS

WORD GUIDE

AUTOMATIC WATER FEED: MACHINE WHICH ADDS WATER FOR YOU.

7. ONCE THE WATER IS CLEARED UP, TURN THE VALVE TO THE RIGHT TO CLOSE IT.



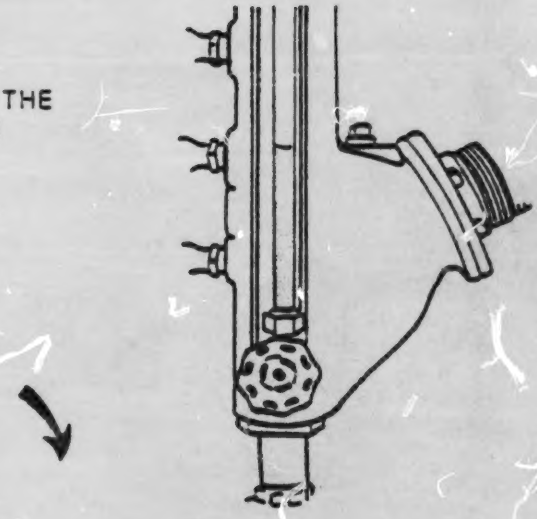


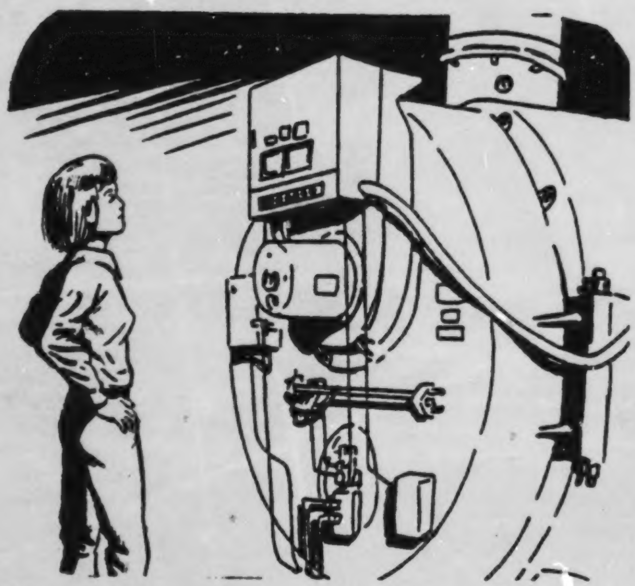
8. LOOK AT THE SIGHT GLASS AND YOU WILL SEE THAT THE WATER LEVEL IN THE SIGHT GLASS HAS GONE BELOW YOUR MARK.

9. WAIT 15 MINUTES, THE AUTOMATIC WATER FEED WILL ADD WATER TO THE BOILER.

JOB STEPS

10. CHECK THE SIGHT GLASS AGAIN. THE WATER LEVEL SHOULD BE CLOSE TO THE FIRST MARK.





11. CHECK TO SEE THAT THE BOILER IS RUNNING.

building maintenance & engineering

unit: STEAM BOILER MAINTENANCE AND OPERATION

capital area career center

module: 2201 10 003 3 date: 5/77 level: I

skill title: BLOW DOWN A STEAM BOILER

developed & written by: DEBORAH WHITE

visuals by: SANDRA STARNAMAN

WORD GUIDE

SLUDGE - MUD FORMED BY MINERALS IN WATER.

SCALE - SLUDGE THAT HAS TURNED VERY HARD.

PERFORMANCE OBJECTIVE

WHAT YOU ARE GOING TO LEARN:

HOW TO BLOW DOWN A STEAM BOILER TO REMOVE SLUDGE AND SCALE IN THE WATER.

AND IN ORDER TO DO THIS YOU WILL NEED:

A BOILER

WE WILL KNOW YOU CAN DO IT WHEN:

THE WATER IN THE BOTTOM OF THE BOILER HAS NO SLUDGE AND SCALE AND THE WATER IS AT THE RIGHT LEVEL.

WORD GUIDE

OVERHEATING - GETTING TOO HOT.

INFORMATION

WHY DO YOU BLOW DOWN A BOILER?

BECAUSE AFTER SOME TIME, MINERALS BUILD UP ON THE INSIDE OF THE BOILER. IF WE DID NOT DRAIN THE SLUDGE AND SCALE FORMING THERE, IT WOULD HARDEN.

WHAT WOULD HAPPEN IF WE LET THESE MINERALS HARDEN?

THE BOILER WOULD TAKE LONGER TO HEAT UP. THIS COSTS EXTRA MONEY BECAUSE IT TAKES MORE FUEL TO HEAT IT UP.

HOW OFTEN SHOULD WE BLOW DOWN A BOILER?

USUALLY ABOUT ONCE A WEEK, IF NECESSARY.

WHY SHOULD WE BLOW DOWN A BOILER IN THE MORNING?

BECAUSE THE BOILER DOES NOT RUN AS MUCH AT NIGHT SO THE SLUDGE AND SCALE DROP TO THE BOTTOM OF THE BOILER.

IS THERE ANYTHING DANGEROUS ABOUT BLOWING DOWN A BOILER?

IF WE DRAIN OUT TOO MUCH WATER, THE BOILER WILL SHUT OFF. IF THE BOILER IS KEPT RUNNING, THERE COULD BE AN EXPLOSION FROM OVERHEATING.

WHAT ABOUT MY SAFETY?

THE TEMPERATURE OF THE WATER YOU ARE DRAINING FROM THE BOTTOM OF THE BOILER IS ABOUT 225 DEGREES. THIS IS HOTTER THAN BOILING WATER. BE VERY CAREFUL NOT TO BURN YOURSELF.

NOW DO

HOW OFTEN SHOULD WE BLOW DOWN A BOILER?

A. ONCE A MONTH, IF NEEDED.
B. ONCE A WEEK, IF NEEDED.
C. ONCE A DAY.
D. NEVER, AS LONG AS IT RUNS.

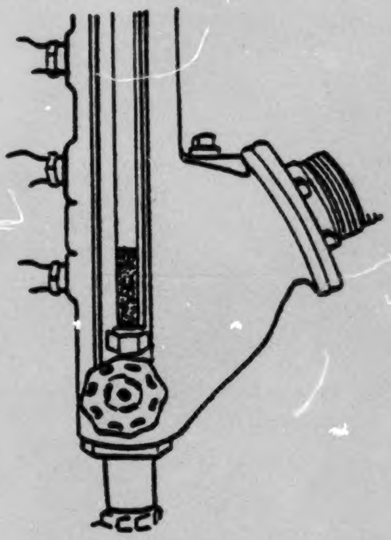
HOPE YOU PICKED "B" - WE DO NOT WANT A BUILD UP OF SLUDGE AND SCALE.

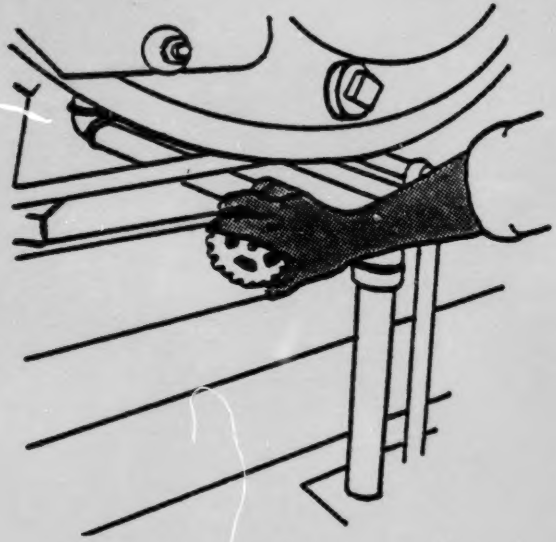
WORD GUIDE

COUNTER-CLOCKWISE - TO THE LEFT.

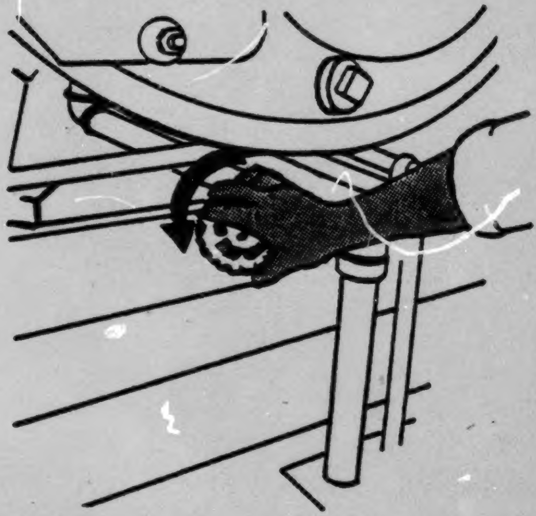
JOB STEPS

1. FIND THE SIGHT GLASS ON THE UPPER PART OF THE BOILER AND CHECK THE WATER LEVEL. MARK THIS PICTURE TO SHOW THE WATER LEVEL IN THE SIGHT GLASS.

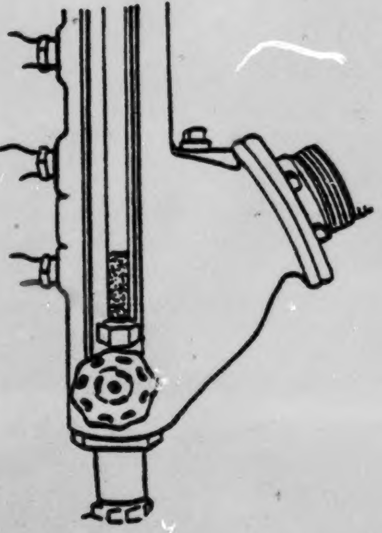




2. FIND THE BLOW-DOWN ON THE BOTTOM OF THE BOILER. THESE MAY BE ANYWHERE - - FRONT, BACK, OR ON THE SIDES.



3. TURN THE VALVE COUNTER-CLOCKWISE TO OPEN. OPEN VALVE ABOUT HALF-WAY.



4. LEAVE VALVE OPEN UNTIL WATER LOOKS CLEAR. THIS WILL TAKE 2 OR 3 MINUTES.

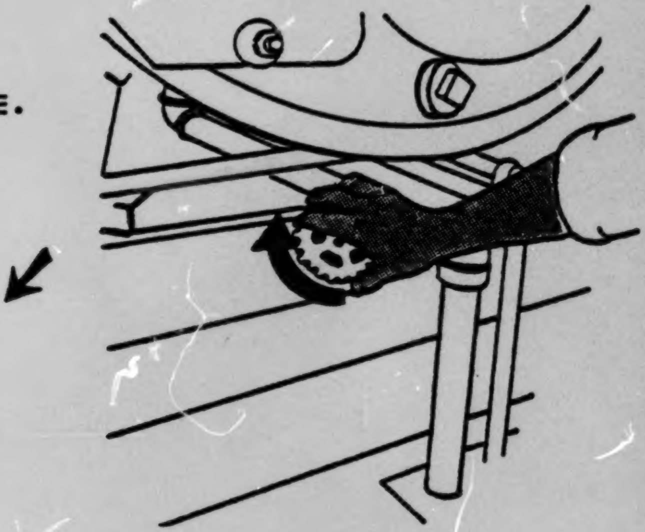
NOTE: THE YELLOW OR GREEN COLOR IS THE BOILER COMPOUND. SLUDGE AND SCALE ARE BROWN.

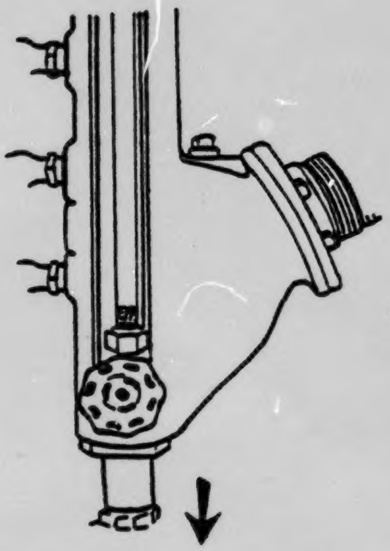
JOB STEPS

WORD GUIDE

AUTOMATIC WATER FEED - AUTOMATICALLY REPLACES WATER LOST IN A BOILER.

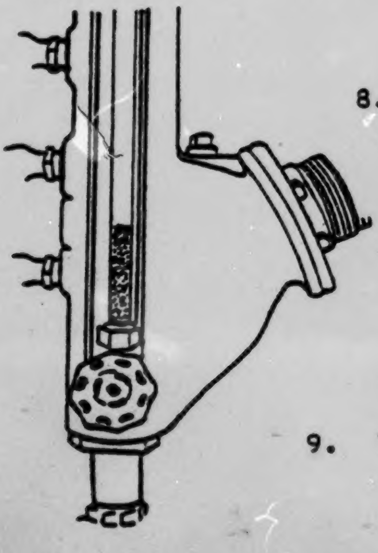
5. CLOSE THE VALVE. TURN IT CLOCKWISE.





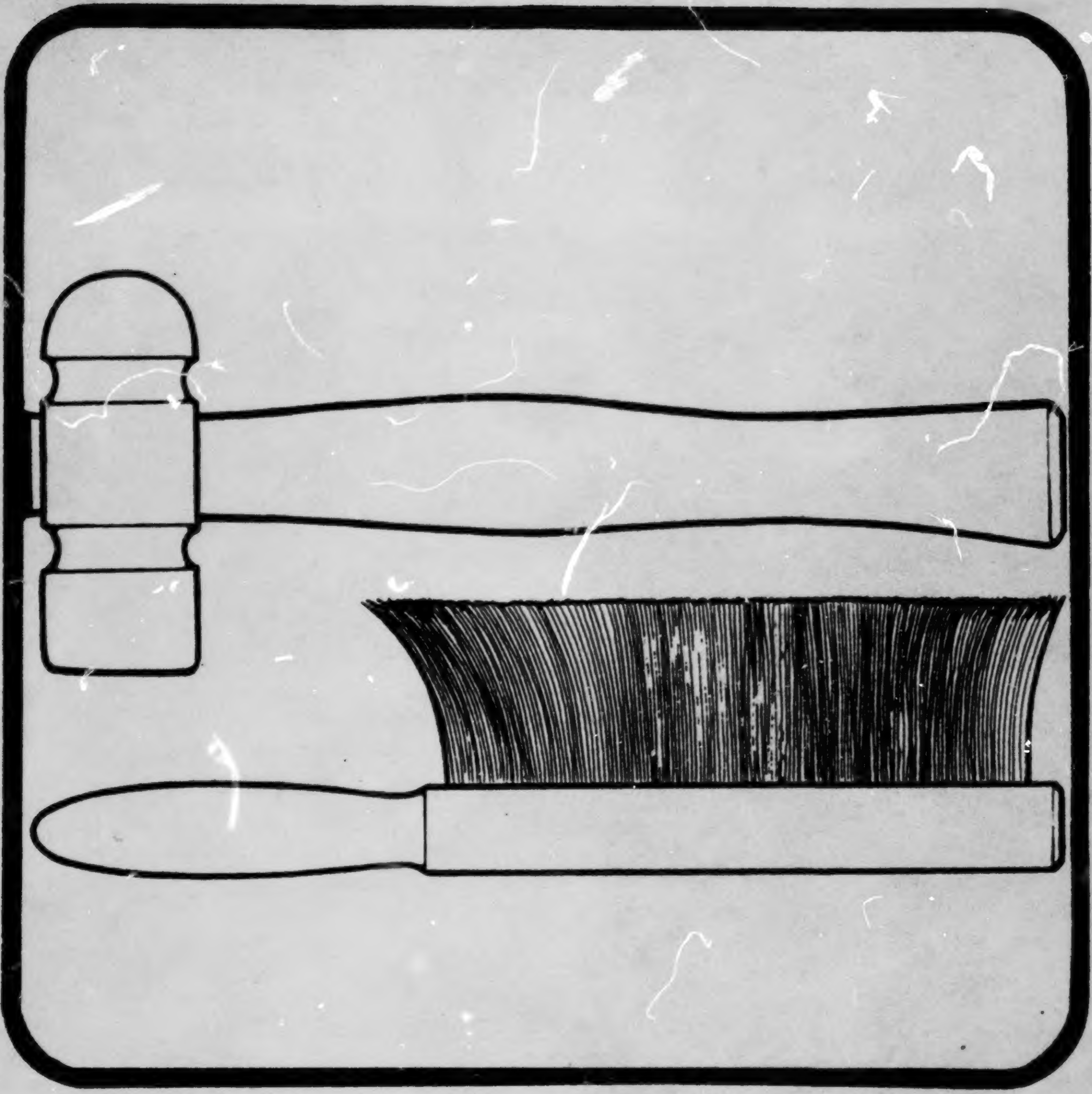
6. LOOK AT THE WATER LEVEL IN THE SIGHT GLASS. NOTICE THAT IT HAS DROPPED.

7. WAIT 15 MINUTES. THE AUTOMATIC WATER FEED WILL ADD WATER.



8. CHECK THE WATER LEVEL IN THE SIGHT AGAIN. THE LEVEL SHOULD BE UP AGAIN.

9. THE BOILER SHOULD BE RUNNING.



building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 001 3 date: FEBRUARY 1977 level:

skill title: OPERATION OF SABRE SAW

developed & written by: MIKE POLEN

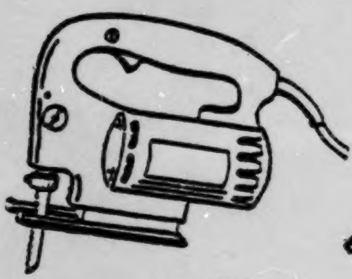
visuals by: BILL DRAPER

PERFORMANCE OBJECTIVE

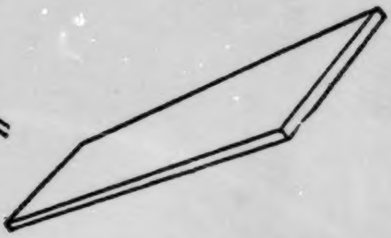
YOU ARE GOING TO LEARN:

HOW TO USE A SABRE SAW.

AND IN ORDER TO DO THIS YOU WILL NEED:

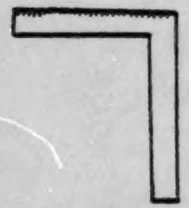


SABRE SAW

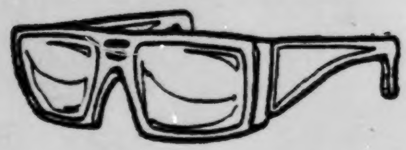


PIECE OF PLYWOOD

PENCIL



TRI-SQUARE



SAFETY GLASSES OR MASK

WE WILL KNOW YOU CAN DO IT WHEN:

FOLLOWING SAFETY INSTRUCTIONS, YOU HAVE CUT THE PLYWOOD ALONG THE CURVED LINES AND THE STRAIGHT CORNERS.

JOB STEPS

WORD GUIDE

DOWN PRESSURE - PRESS DOWN ON SAW.

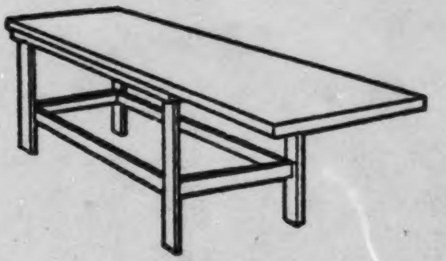
CAUTION!

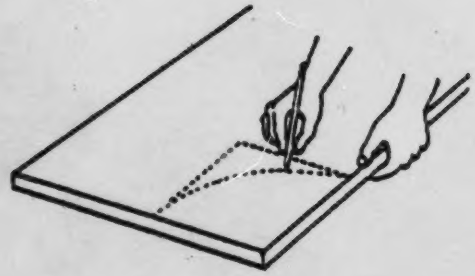
A. BE SURE INSTRUCTOR WATCHES YOU WHEN YOU DO THESE JOB STEPS.

B. NEVER REMOVE THE SAW FROM THE CUT UNTIL THE BLADE HAS STOPPED MOVING.

C. REMOVE THE ELECTRICAL PLUG FROM SOCKET WHEN MAKING CHANGES ON THE SAW.

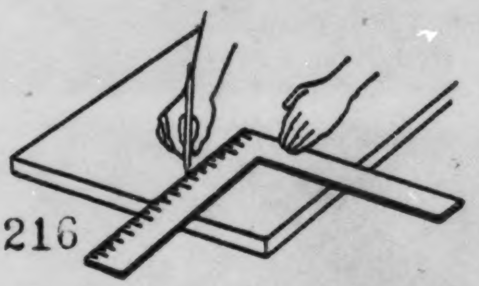
1. PLACE PLYWOOD OVER THE EDGE OF YOUR TABLE OR BENCH SO THAT THE SAW WILL NOT CUT INTO IT.





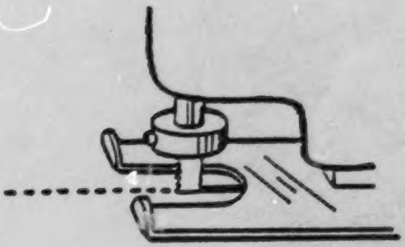
2. WITH A PENCIL AND TRI-SQUARE DRAW A SQUARE CORNER ON THE PLYWOOD.

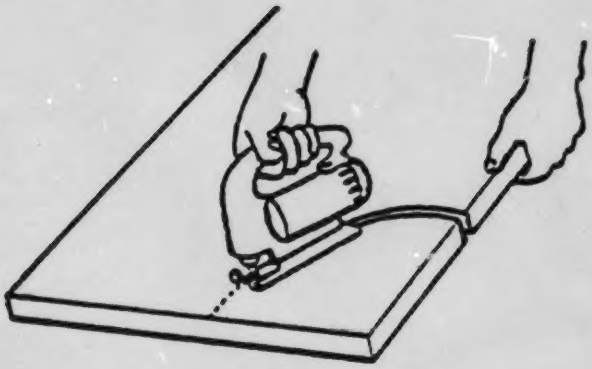
3. THEN DRAW A CURVED LINE BETWEEN THE ENDS OF YOUR SQUARE CORNER.



JOB STEPS

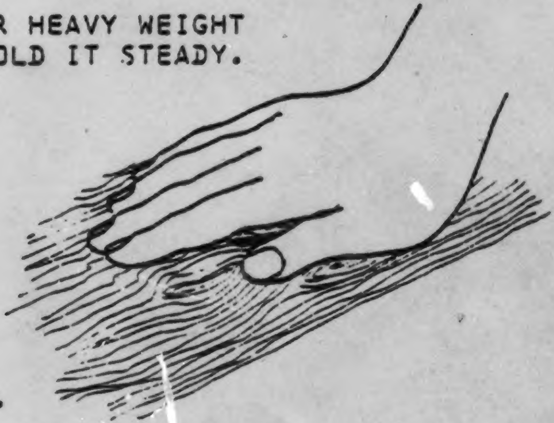
4. PLACE FRONT OF THE SAW-STAND ON THE PLYWOOD. YOU SHOULD SEE THE PENCIL LINE THROUGH THE VIEWING GAP. WEAR SAFETY GLASSES OR SAFETY MASK.



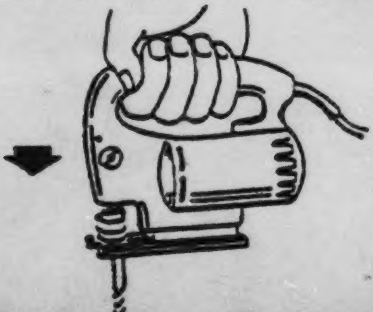


5. PULL SWITCH TO START SAW AND MOVE SAW SLOWLY FORWARD. KEEP THE CURVED PENCIL LINE ON THE EDGE OF VIEWING GAP.

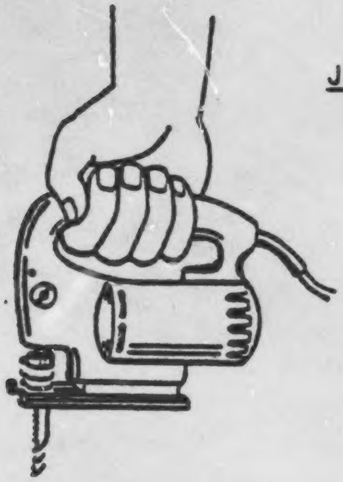
6. KEEP ONE HAND OR HEAVY WEIGHT ON PLYWOOD TO HOLD IT STEADY.



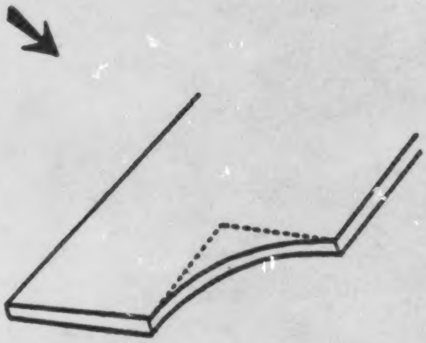
7. KEEP DOWN PRESSURE ON THE SAW SO IT WILL NOT JUMP UP AND DOWN.



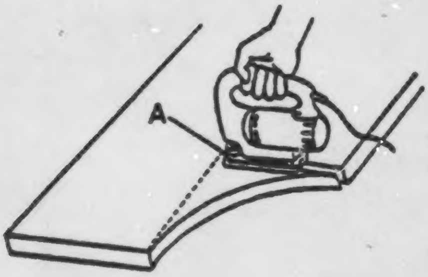
JOB STEPS



8. WHEN CUTTING IS DONE, WAIT UNTIL SAW STOPS BEFORE PUTTING DOWN.

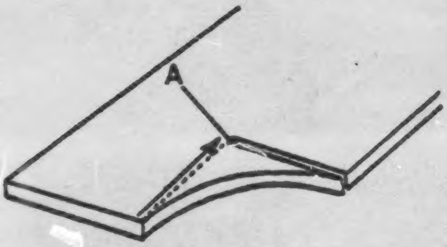


9. SEE DIAGRAM FOR CUTTING SQUARE CORNERS. BEGIN WHERE YOU BEGAN CUT FOR CURVED LINE.



10. CUT ALONG PENCIL LINE UNTIL YOU REACH ANGLE OF SQUARE. (POINT A)

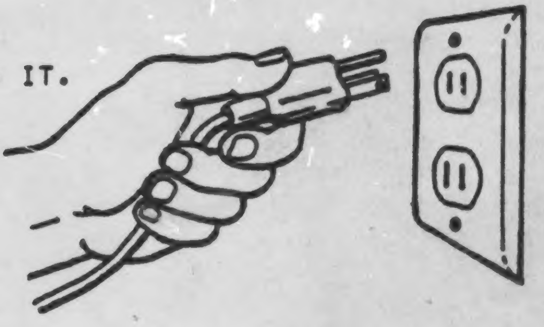
11. STOP THE SAW.



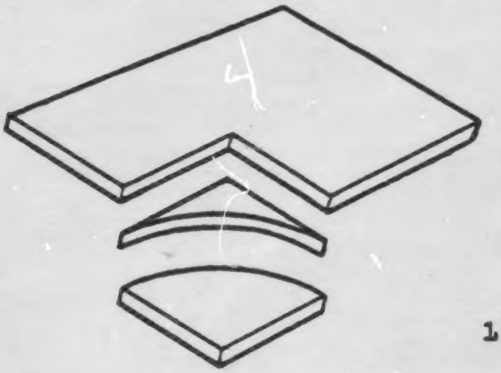
12. PULL OUT THE SAW AND CUT ALONG SECOND PENCIL LINE UNTIL YOU REACH POINT A.

JOB STEPS

13. STOP THE SAW. UNPLUG IT.



14. YOUR PLYWOOD PIECES SHOULD LOOK LIKE THOSE BELOW.



15. TAKE THE PLYWOOD PIECES TO YOUR INSTRUCTOR.

16. CLEAN UP WORK AND PUT AWAY ALL EQUIPMENT.

building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 002 3 date: 2/77 level: II

skill title: OPERATION OF DRILL PRESS

developed & written by: MIKE POLEN

visuals by: CHUCK KNOCK AND MARIE GOUGEON

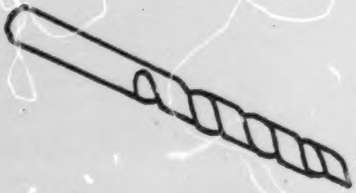
PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

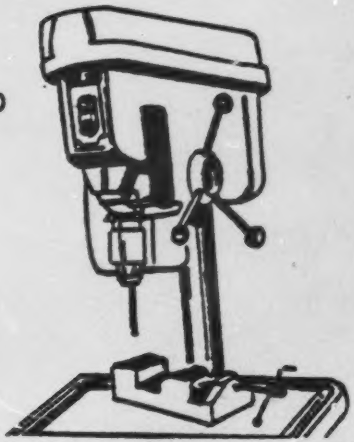
HOW TO USE A DRILL PRESS.

AND IN ORDER TO DO THIS YOU WILL NEED:

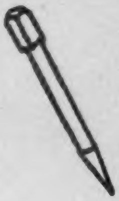
- HAMMER
- PIECE OF WOOD
- PENCIL
- CHUCK WRENCH
- SAFETY GLASSES



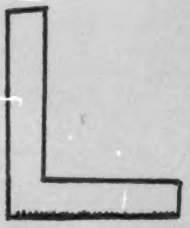
DRILL BIT



DRILL PRESS



PRICK PUNCH



TRI-SQUARE

WE WILL KNOW YOU CAN DO IT WHEN:

THE HOLE YOU HAVE DRILLED IS IN THE RIGHT PLACE, IS STRAIGHT, AND YOU WORKED SAFELY.

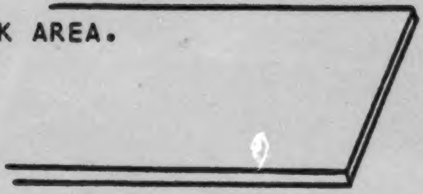
JOB STEPS

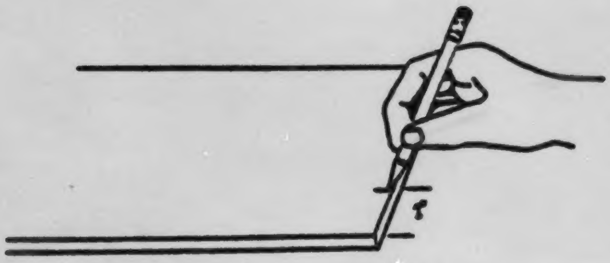
CAUTION:

A. UNPLUG ELECTRICAL CORD WHEN CHANGING BITS.

B. DO NOT LEAVE THE CHUCK WRENCH IN THE DRILL WHEN YOU ARE DONE USING IT.

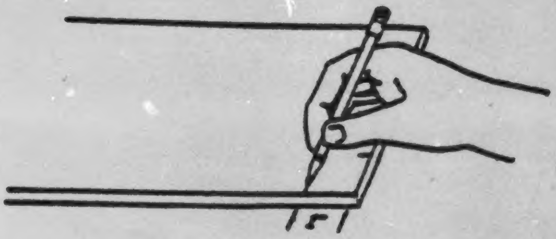
1. GET YOUR MATERIALS AND GO TO WORK AREA. PUT A PIECE OF MATERIAL (WOOD OR METAL) ON THE TABLE.





2. MEASURE UP 1 INCH FROM THE BOTTOM RIGHT CORNER AND MAKE A PENCIL MARK ON THE EDGE.

3. MEASURE 1 INCH TO THE LEFT OF THE BOTTOM CORNER AND MAKE A PENCIL MARK.

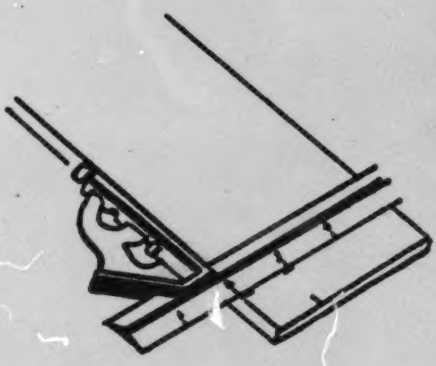


WORD GUIDE

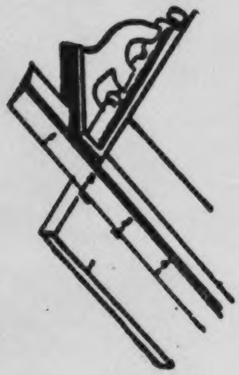
PRICK PUNCH - METAL TOOL WITH POINTED END.

TRI-SQUARE - USED TO MEASURE AND MAKE ANGLES.

JOB STEPS

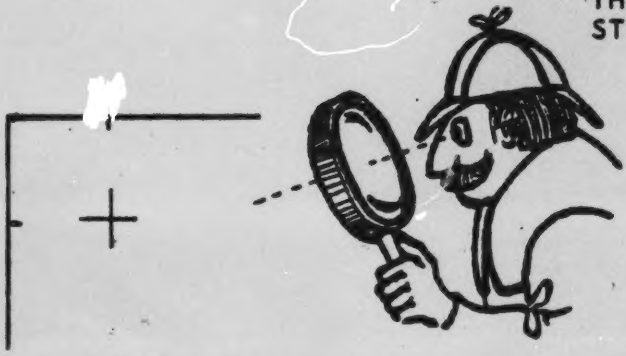


4. PUT A TRI-SQUARE EVEN WITH FIRST MARK, MEASURE 1 INCH ONTO THE MATERIAL AND MAKE ANOTHER PENCIL MARK.

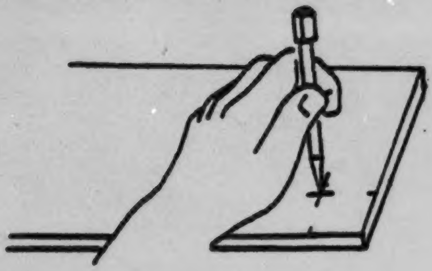


5. PUT A TRI-SQUARE EVEN WITH SECOND MARK, MEASURE 1 INCH ONTO THE WOOD, AND MARK IT.

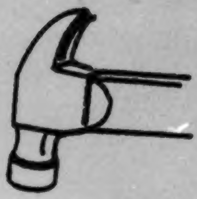
CHECK: MARK FOR STEP 5 SHOULD CROSS THE MARK WHICH YOU MADE FOR STEP 4.



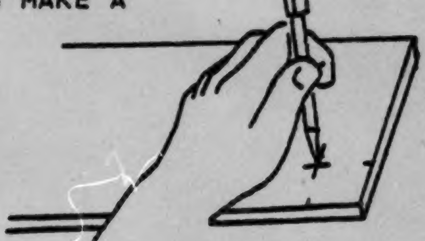
JOB STEPS

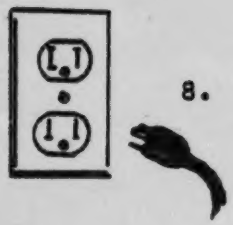


6. PLACE THE POINT OF A PRICK PUNCH IN THE CENTER OF THE CROSSED MARKS.



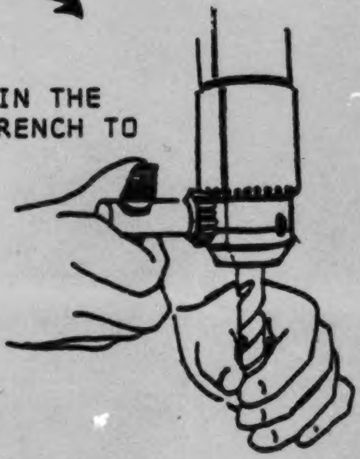
7. TAP THE PUNCH FIRMLY WITH A HAMMER IN ORDER TO MAKE A STARTER HOLE.





8. BE SURE THE ELECTRICAL CORD FROM DRILL IS NOT PLUGGED IN.

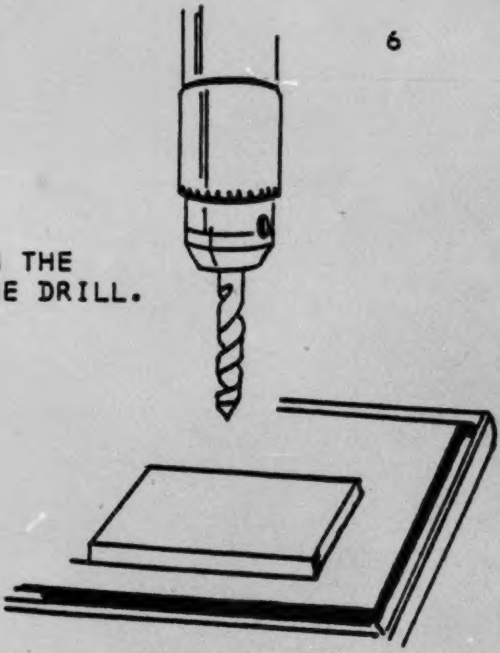
9. PLACE A 1/4 INCH DRILL IN THE CHUCK. USE THE CHUCK WRENCH TO TIGHTEN.

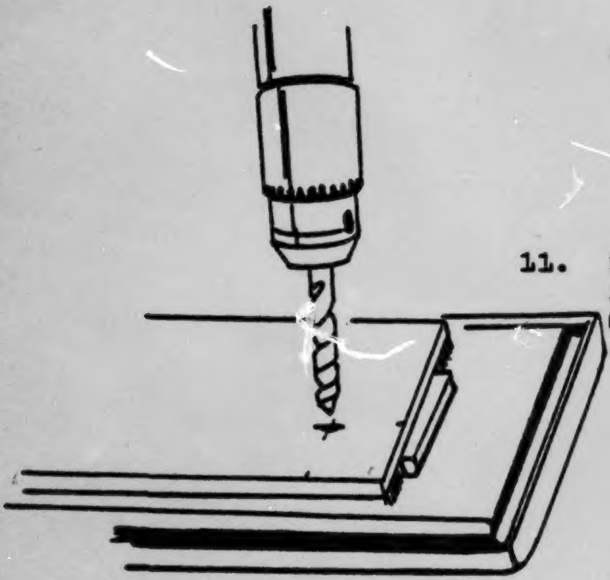


CAUTION: REMOVE THE WRENCH AND PUT IT IN THE TRAY.

JOB STEPS

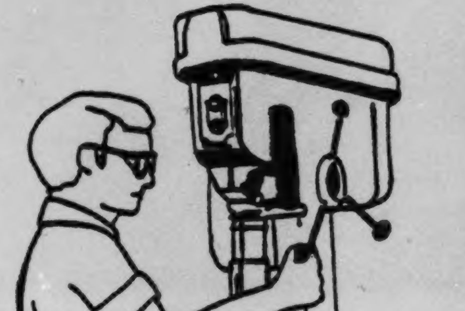
10. PUT A SMALL PIECE OF WOOD ON THE DRILL TABLE EXACTLY UNDER THE DRILL.



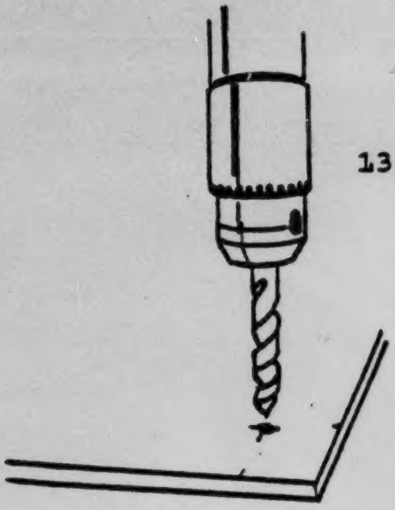


11. PUT MATERIAL WITH THE PUNCHED STARTER HOLE ON TOP OF THE PIECE OF WOOD.

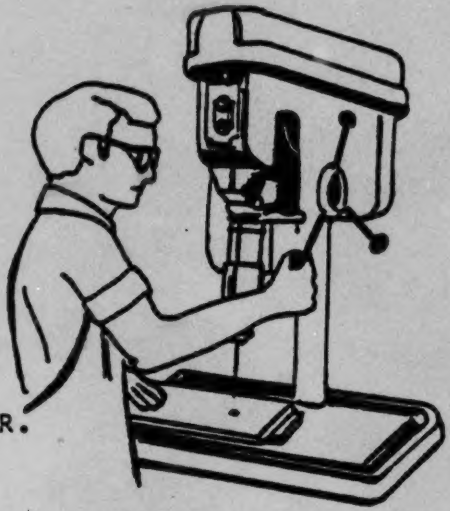
12. MOVE THE DRILL PRESS CONTROL LEVER TO LOWER THE DRILL DOWN TO THE MATERIAL.
WEAR YOUR SAFETY GLASSES.



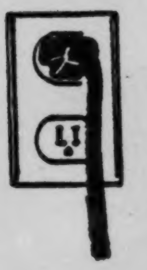
JOB STEPS



13. LINE UP THE POINT OF THE DRILL WITH THE STARTER HOLE IN THE MATERIAL.



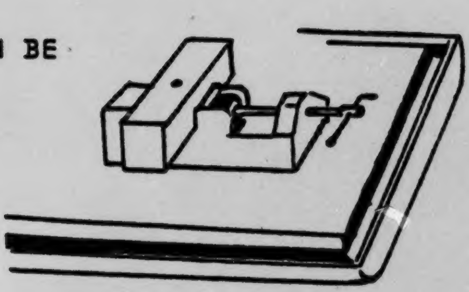
14. HOLD THE MATERIAL IN PLACE AND SLOWLY LET GO OF THE CONTROL LEVER.

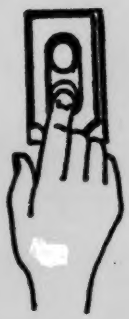


15. PLUG IN THE ELECTRICAL CORD.

JOB STEPS

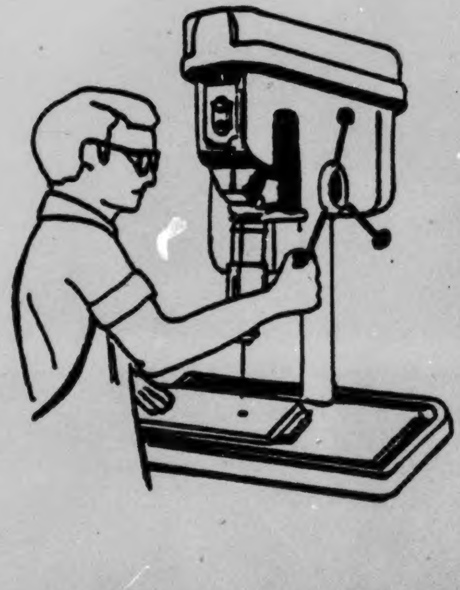
NOTE: SOMETIMES THE MATERIAL CAN BE HELD DOWN WITH A CLAMP.



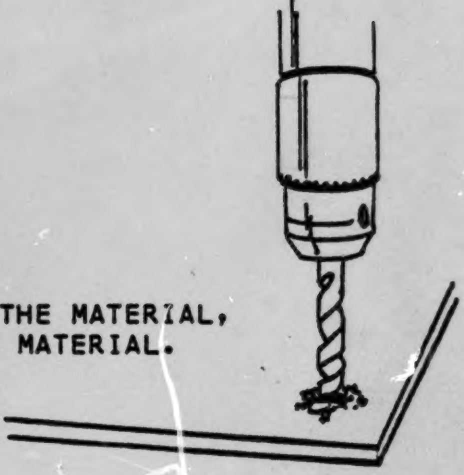


16. PRESS THE START BUTTON.

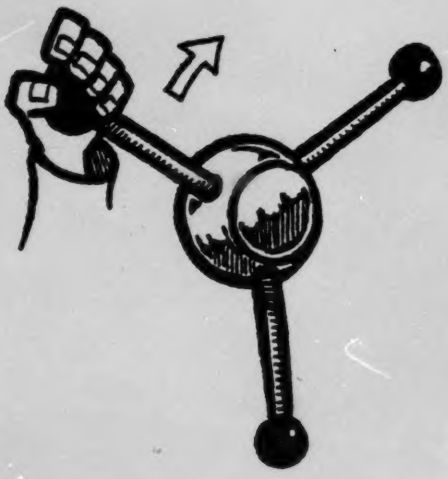
17. LOWER THE CONTROL LEVER SLOWLY UNTIL DRILL MEETS MATERIAL AT THE PUNCHED MARK.



JOB STEPS

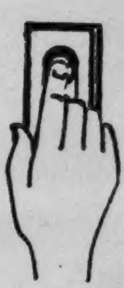


18. HOLDING TIGHT TO THE MATERIAL, DRILL THROUGH THE MATERIAL.



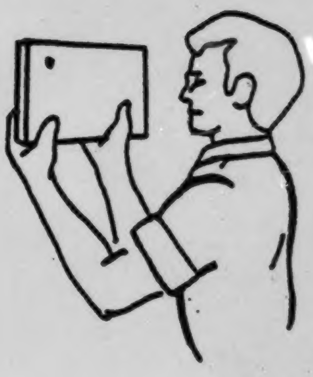
19. WHEN THE HOLE IS DRILLED, SLOWLY RAISE THE CONTROL LEVER.

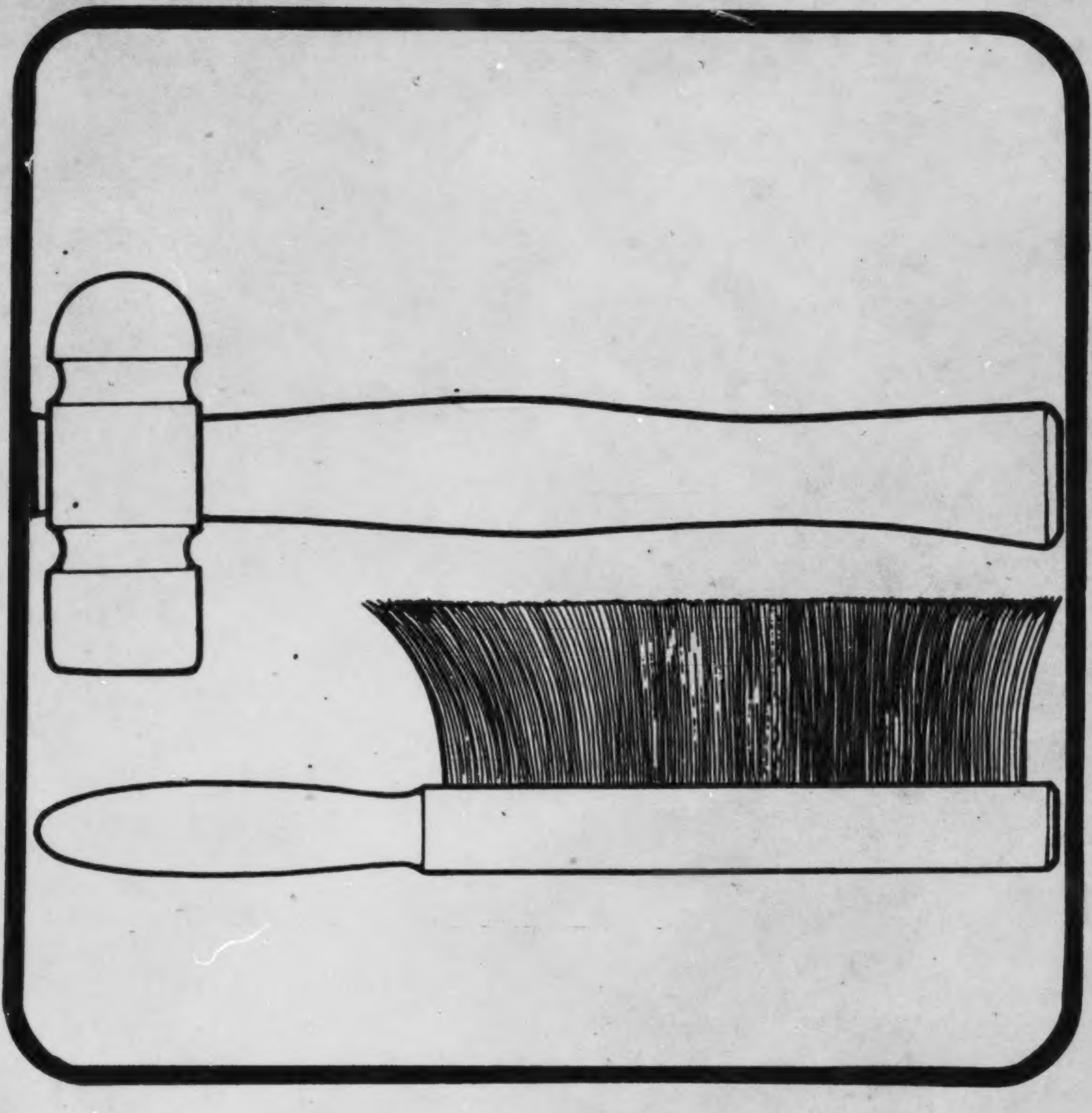
20. PUSH THE STOP BUTTON. UNPLUG ELECTRICAL CORD.



JOB STEPS

21. TAKE THE DRILLED MATERIAL TO YOUR INSTRUCTOR.





building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 003 3 date: FEBRUARY 1977 level:

skill title: OPERATION OF POWER SANDER

developed & written by: MIKE POLEN

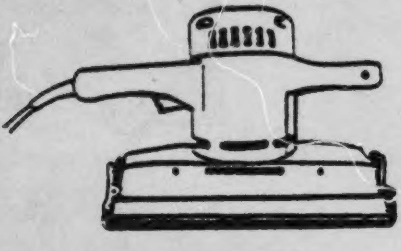
visuals by: CHUCK KNOCK AND MARIE GOUGEON

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

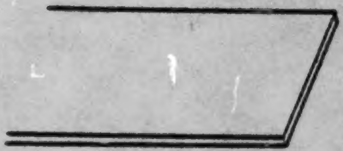
HOW TO USE A POWER SANDER.

AND IN ORDER TO DO THIS YOU WILL NEED:

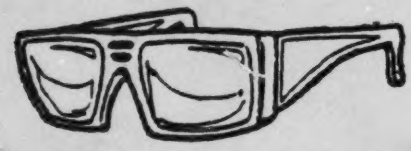


POWER SANDER

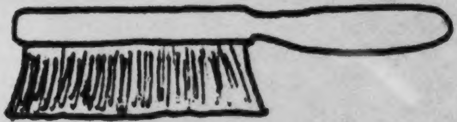
SANDPAPER



WOOD TO BE SANDED



SAFETY GLASSES



HAND BRUSH

WE WILL KNOW YOU CAN DO IT WHEN:

THE WOOD YOU HAVE SANDED IS SMOOTH TO THE TOUCH, WITHOUT SCRATCHES AND ROUGH SPOTS, AND DUST HAS BEEN REMOVED.

WORD GUIDE

ROUGH WOOD - WOOD THAT FEELS VERY ROUGH TO THE TOUCH.

ROUGH SANDPAPER - VERY HEAVY GRIT SANDPAPER. WILL WEAR DOWN THE WOOD VERY QUICKLY.

MEDIUM SANDPAPER - SMOOTHER THAN ROUGH PAPER.

FINE SANDPAPER - SMOOTHER THAN MEDIUM PAPER, FOR FINISH SANDING.

INFORMATION

ON VERY ROUGH WOOD, START WITH VERY ROUGH PAPER. THEN CHANGE TO A MEDIUM PAPER, AND FINALLY USE A FINE GRIT SANDPAPER.

CAUTION:

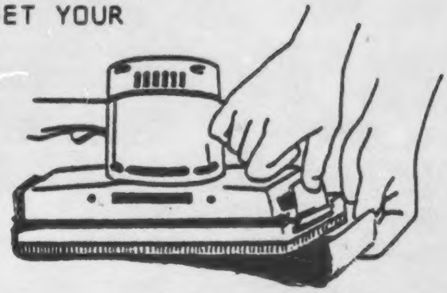
A. UNPLUG SANDER BEFORE CLEANING SANDPAPER.

B. KEEP A FIRM GRIP ON SANDER TO AVOID MAKING DIGS OR MARS ON THE WOOD, AND TO AVOID DROPPING THE SANDER.

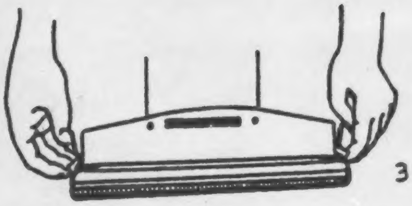
C. DO NOT TILT THE SANDER. THIS MAKES DEEP DIGS IN THE WOOD.

JOB STEPS

1. WITH SANDER UNPLUGGED, LIFT SPRING CLAMPS. GET YOUR MATERIALS.

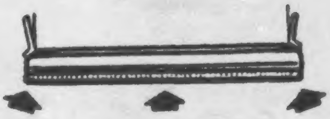


2. SLIDE AT LEAST 1/2 EDGE OF SANDPAPER UNDER THE HOLDING EDGE.

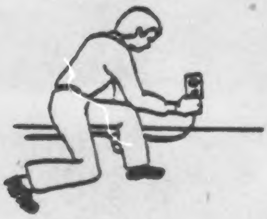


3. PUSH CLAMPS DOWN.

NOTE: BE SURE SANDPAPER DOES NOT DROOP AWAY FROM SANDER.

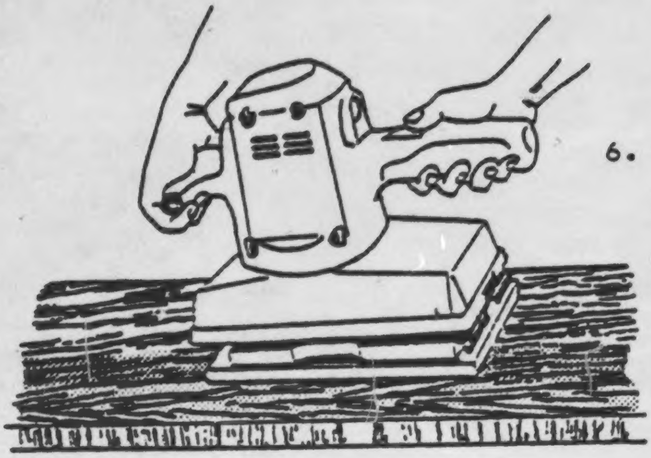


4. PLUG IN THE SANDER CORD.



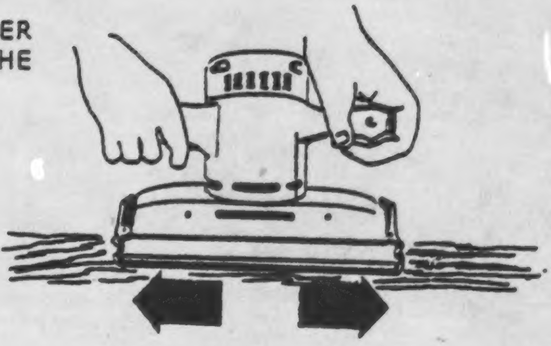
JOB STEPS

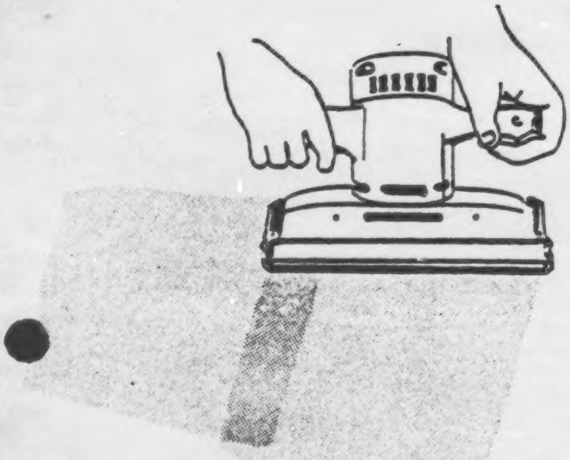
5. PLACE SANDER ON THE WOOD SO THAT IT WILL SAND IN THE DIRECTION OF THE GRAIN.



6. HOLD ON TO SANDER WITH BOTH HANDS. PUSH DOWN SLIGHTLY.

7. TURN ON THE SWITCH AND MOVE SANDER BACK AND FORTH SLOWLY. FOLLOW THE GRAIN. WEAR SAFETY GLASSES.

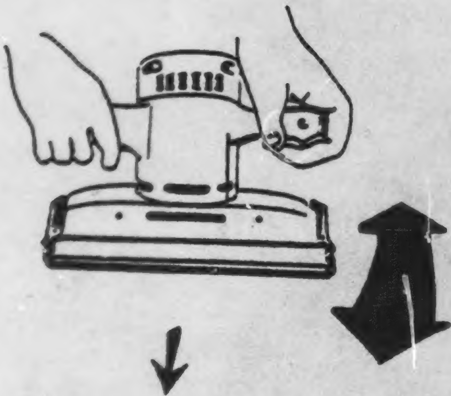




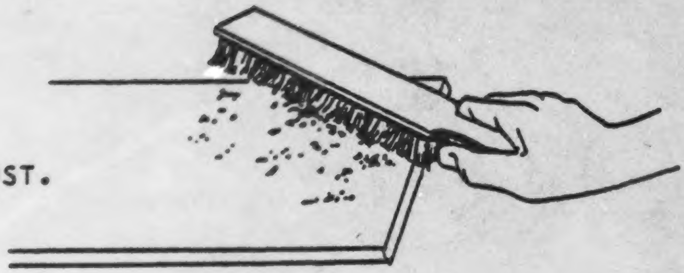
8. MOVE TO THE LEFT OR RIGHT AND OVERLAP EACH STROKE.

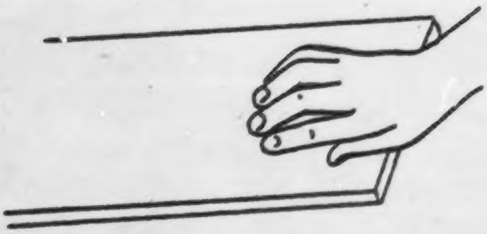
JOB STEPS

9. REPEAT STEP 9 UNTIL SURFACE OF WOOD IS ALL SANDED.



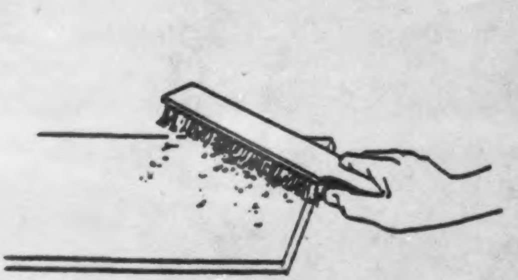
10. BRUSH OFF THE DUST.





11. FEEL THE SURFACE OF THE WOOD WITH YOUR FINGERS. YOU WILL BE ABLE TO FEEL ROUGH SPOTS.

12. WHEN YOU THINK THE WOOD IS SMOOTH, DUST IT OFF AND SHOW YOUR INSTRUCTOR. UNPLUG SANDER.



building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 004 3 date: 2/77 level: II

skill title: OPERATION OF TABLE SAW

developed & written by: MIKE POLEN

visuals by: CHUCK KNOCK

WORD GUIDE

CUT - SAW ACROSS THE WOOD GRAIN USING THE ANGLE GUIDE.

RIP - SAW WITH THE WOOD GRAIN USING THE RIP FENCE.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE A TABLE SAW.

AND IN ORDER TO DO THIS YOU WILL NEED:

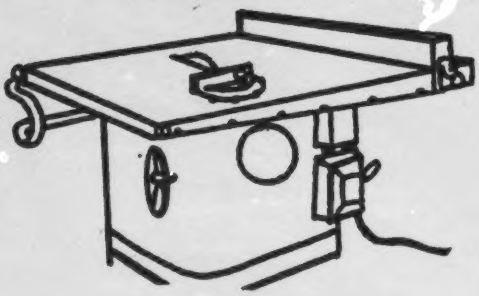
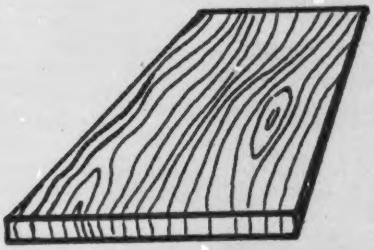
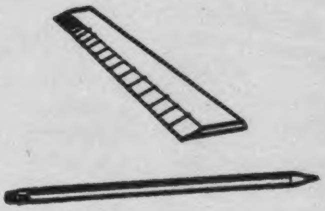


TABLE SAW



PIECE OF WOOD



RULER AND PENCIL

SAFETY GLASSES

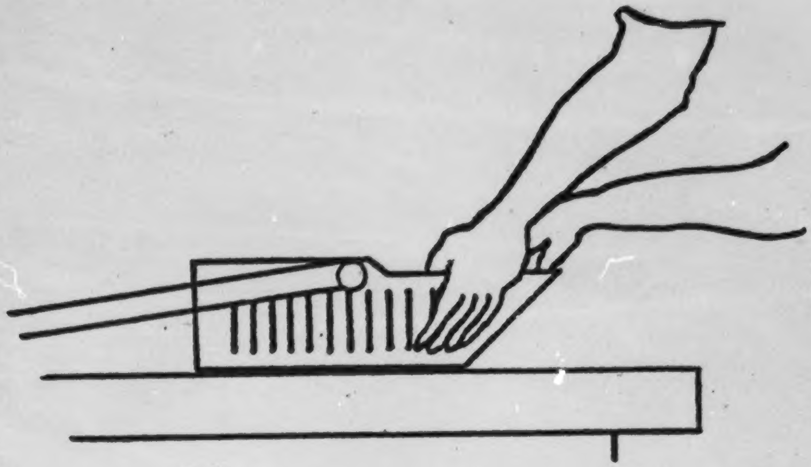
WE WILL KNOW THAT YOU CAN DO IT WHEN:

1. YOU ARE ABLE TO CUT OFF A PIECE OF MATERIAL NO MORE THAN 1/16 OF AN INCH OFF WHAT YOU WERE TOLD.
2. YOU ARE ABLE TO RIP A PIECE OF MATERIAL NO MORE THAN 1/16 OF AN INCH OFF WHAT YOU WERE TOLD.
3. YOU HAVE DONE THE CUT AND RIP SAFELY.

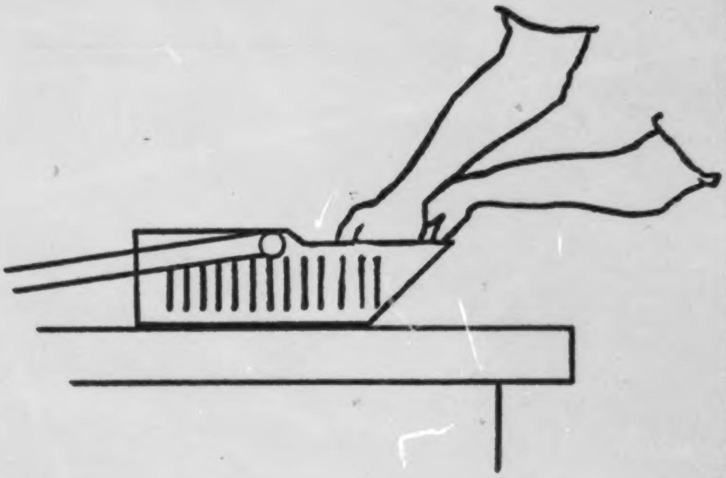
INFORMATION

CAUTION:

1. DO NOT RUN THE SAW WITHOUT A GUARD OVER THE BLADE.



2. NEVER PUT YOUR FINGERS OR HAND INSIDE THE GUARDED AREA.



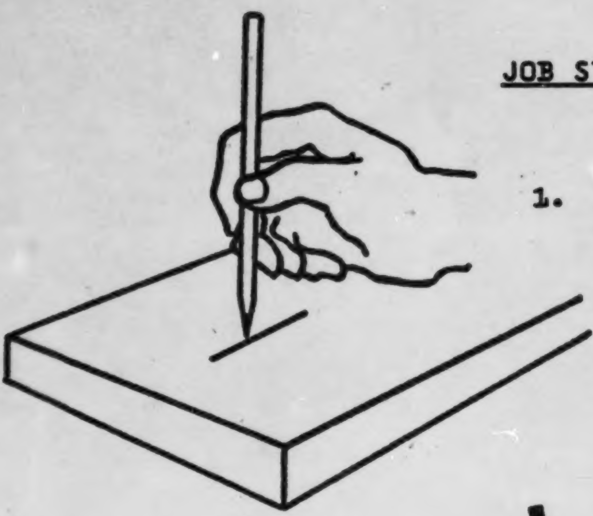
3. UNPLUG THE SAW WHEN CHANGING BLADES.

4. ALWAYS MAKE SURE THE BLADE IS SHARP.

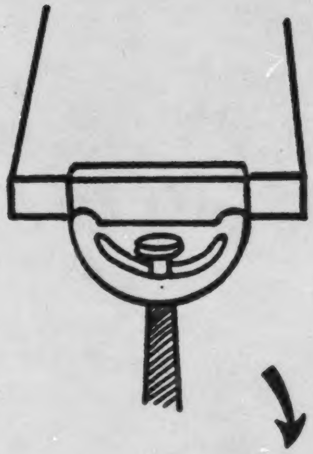
WORD GUIDE

ANGLE GUIDE - THE TOOL THAT SLIDES IN THE GROOVE ON THE TABLE.

JOB STEPS

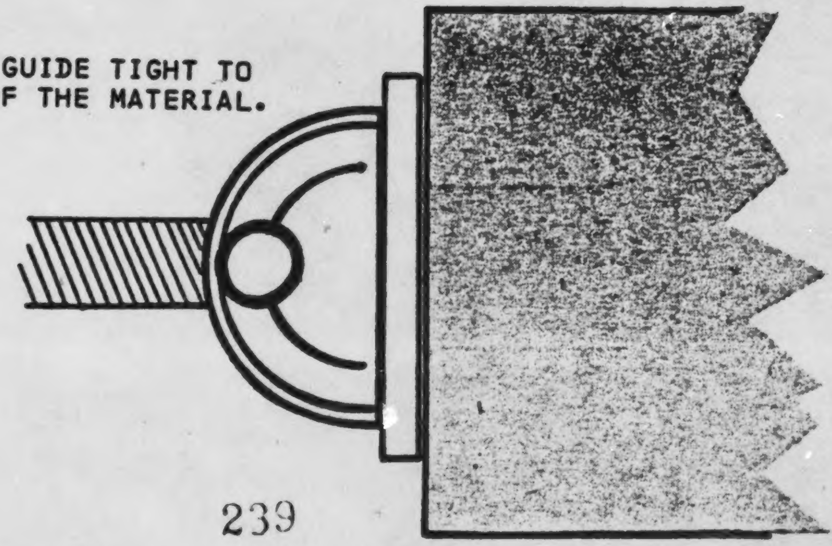


1. MEASURE 2 INCHES AND DRAW A LINE ON THE FRONT EDGE OF THE MATERIAL.



2. PUT BACK SIDE OF THE MATERIAL IN FRONT OF THE ANGLE GUIDE.

3. PUSH THE ANGLE GUIDE TIGHT TO THE BACK EDGE OF THE MATERIAL.



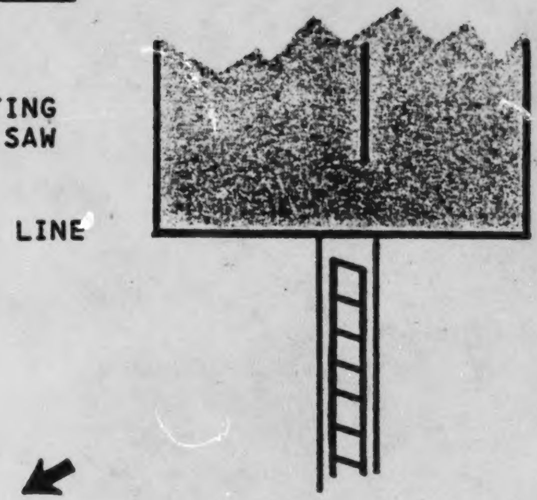
WORD GUIDE

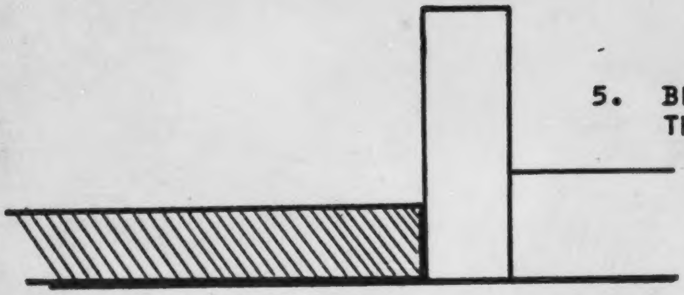
FLUSH - EVEN AND STRAIGHT.

JOB STEPS

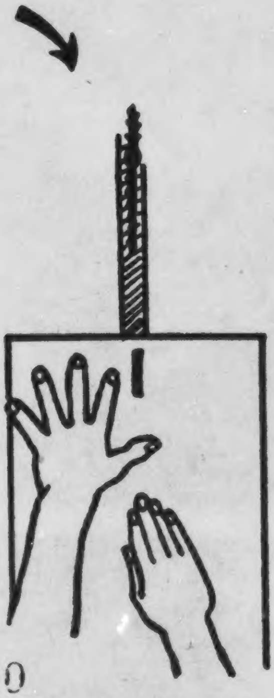
4. LINE UP THE MATERIAL BY PUTTING THE PENCIL LINE NEXT TO THE SAW BLADE.

NOTE: LINE UP SO THAT THE PENCIL LINE WILL NOT BE CUT OFF.





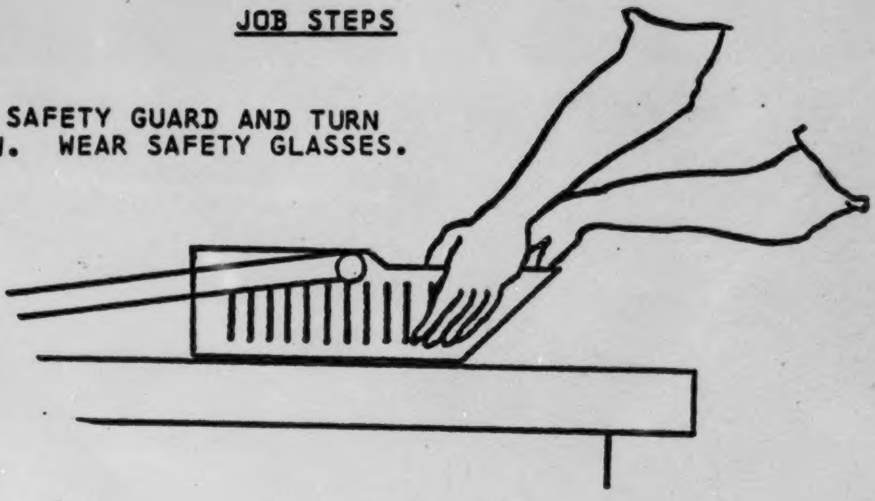
5. BE SURE ANGLE GUIDE IS FLUSH WITH THE BACK EDGE.

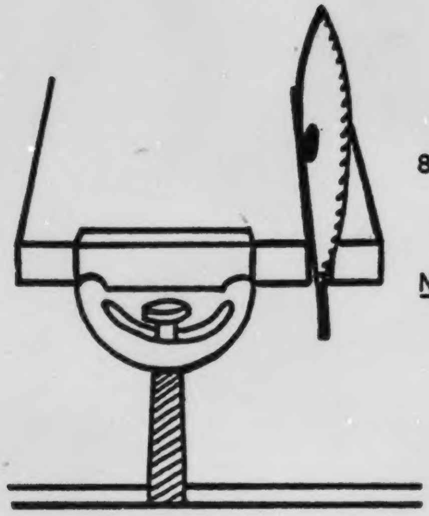


6. WITHOUT MOVING IT SIDEWAYS, PULL BACK THE MATERIAL AT LEAST 4 INCHES FROM THE BLADE.

JOB STEPS

7. LOWER THE SAFETY GUARD AND TURN ON THE SAW. WEAR SAFETY GLASSES.

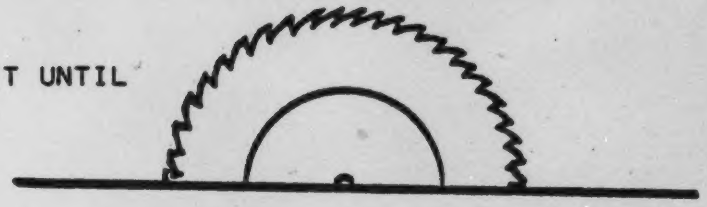


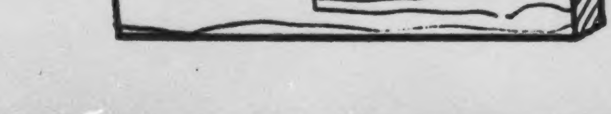


8. SLOWLY PUSH THE MATERIAL THROUGH THE BLADE USING THE ANGLE GUIDE.

NOTE: OTHER HAND IS USED TO KEEP MATERIAL STEADY. BUT KEEP IT AWAY FROM THE BLADE.

9. TURN THE SAW OFF AND WAIT UNTIL BLADE STOPS MOVING.





10. PICK UP SAWED MATERIAL.

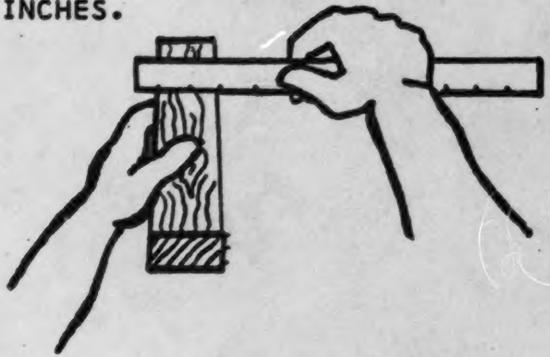
J

WORD GUIDE

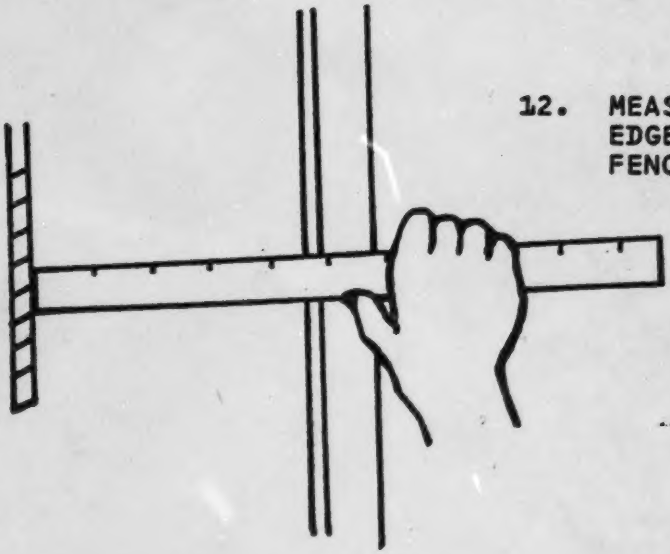
RIP FENCE - THE PIECE OF METAL THAT ADJUSTS SIDEWAYS ON THE TABLE.

JOB STEPS

11. MEASURE THE MATERIAL. IT MUST BE WITHIN 1/16 INCH OF 2 INCHES.

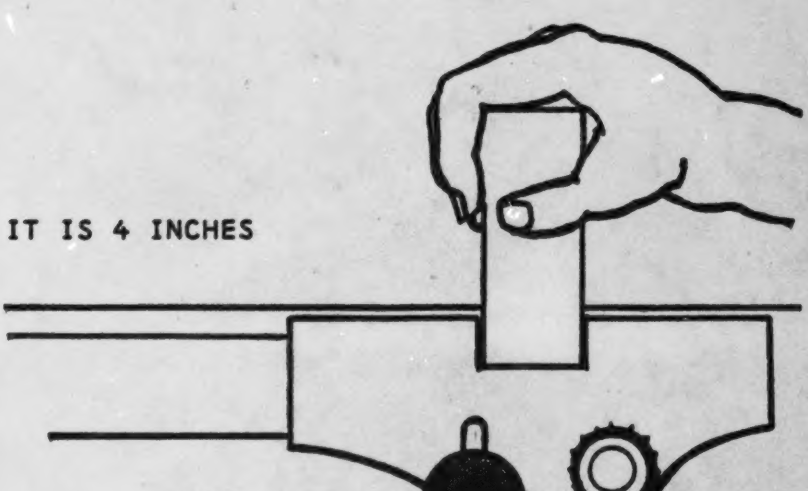


USE OF THE RIP FENCE:



12. MEASURE 4 INCHES FROM THE INSIDE EDGE OF THE SAW BLADE TO THE RIP FENCE.

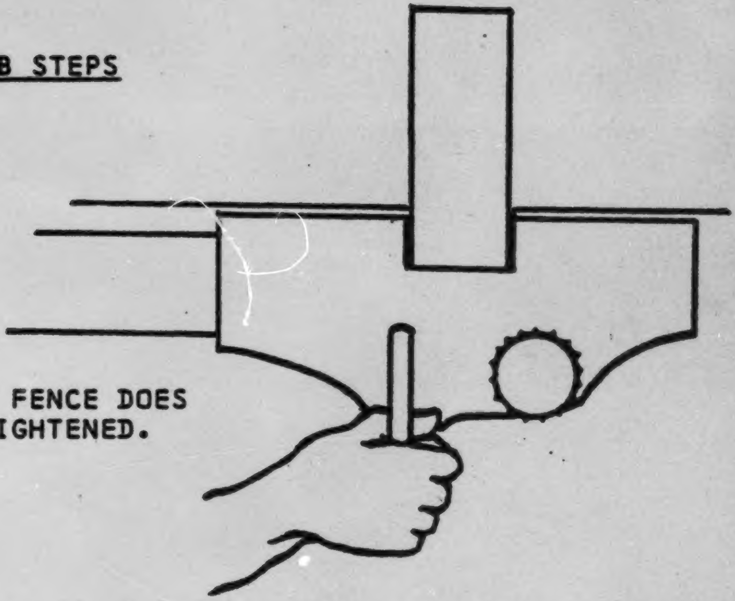
13. MOVE RIP FENCE UNTIL IT IS 4 INCHES FROM THE SAW BLADE.

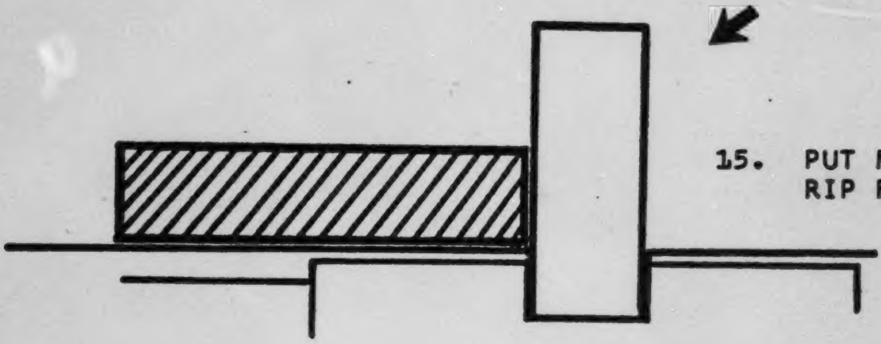


JOB STEPS

14. TIGHTEN THE RIP FENCE.

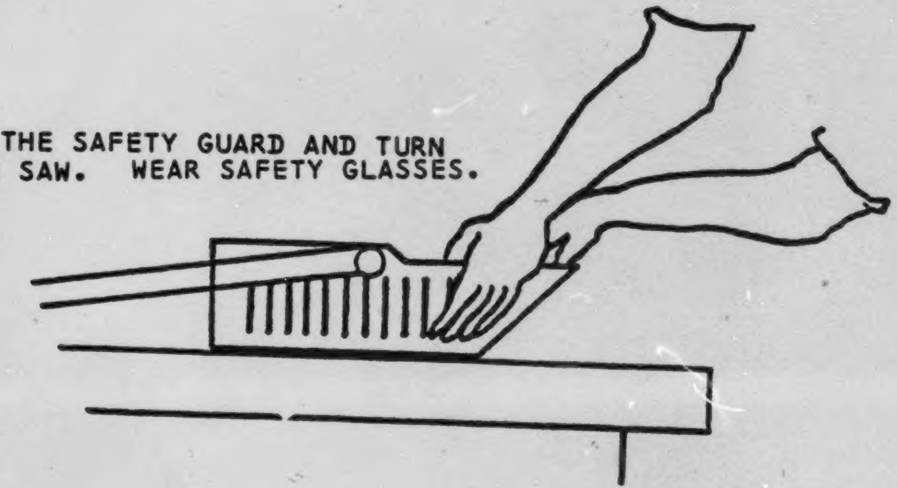
NOTE: WATCH CLOSELY TO BE SURE FENCE DOES NOT MOVE WHEN LEVER IS TIGHTENED.



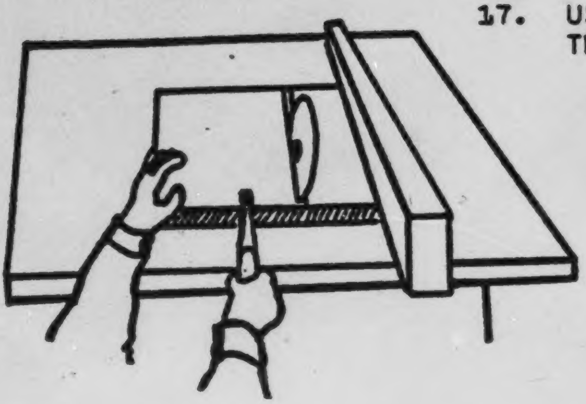


15. PUT MATERIAL TIGHT AGAINST RIP FENCE.

16. LOWER THE SAFETY GUARD AND TURN ON THE SAW. WEAR SAFETY GLASSES.



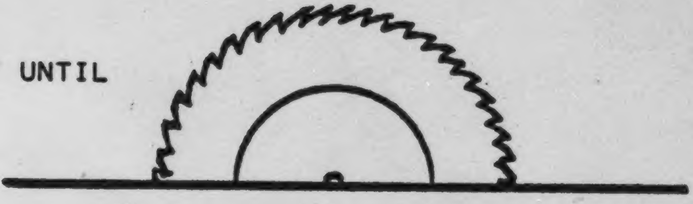
JOB STEPS

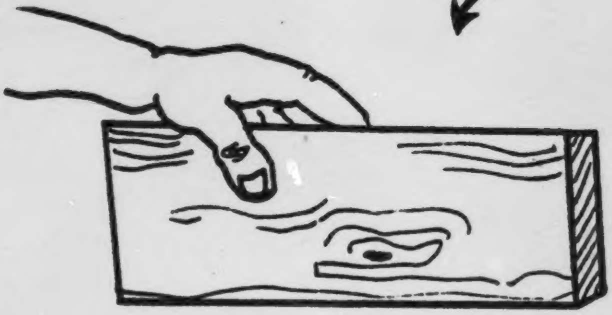


17. USE A SMALL PIECE OF WOOD TO PUSH THE MATERIAL SLOWLY THROUGH THE BLADE.

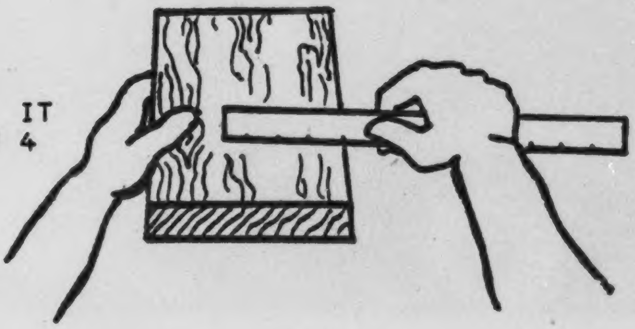
NOTE: OTHER HAND IS USED TO STEADY THE MATERIAL. BUT KEEP AWAY FROM THE BLADE.

18. TURN OFF THE SAW AND WAIT UNTIL BLADE STOPS MOVING.





19. PICK UP THE MATERIAL YOU HAVE CUT.



20. MEASURE YOUR 4 INCH PIECE. IT MUST BE WITHIN 1/16 INCH OF 4 INCHES.

21. TAKE YOUR PIECES TO YOUR INSTRUCTOR. UNPLUG SAW CORD.

building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 005 3 date: 2/77 level: II

skill title: OPERATION OF CIRCULAR SAW

developed & written by: MIKE POLEN

visuals by: CHUCK KNOCK

WORD GUIDE

PINCHING - BINDING OR STOPPING THE SAW BLADE IN THE MATERIAL.

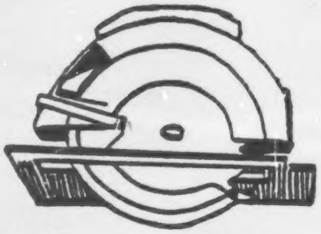
PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE A CIRCULAR SAW.

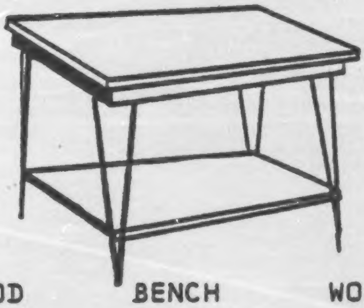
AND IN ORDER TO DO THIS YOU WILL NEED:

SAFETY GLASSES

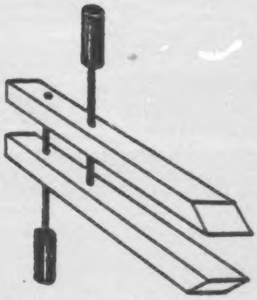


CIRCULAR SAW

PIECE OF PLYWOOD



BENCH



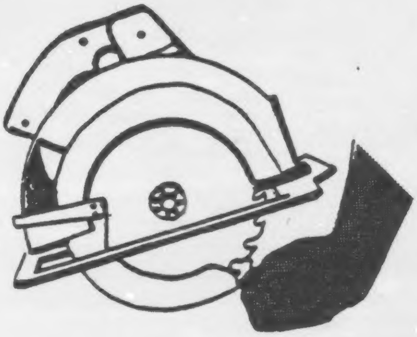
WOOD CLAMPS

WE WILL KNOW YOU CAN DO IT WHEN:

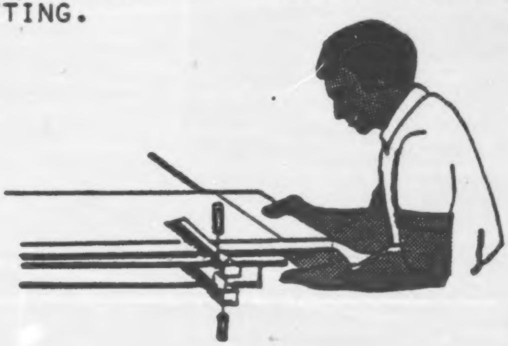
YOU HAVE CUT THROUGH THE PLYWOOD IN A STRAIGHT LINE WITHOUT PINCHING THE SAW BLADE IN THE MATERIAL.

CAUTION:

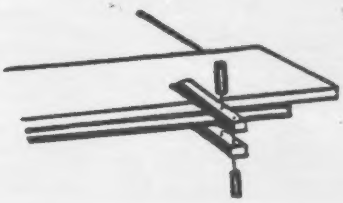
A. CHECK SAW GUARD FOR EASY MOVEMENT.



B. MAKE SURE BENCH OR TABLE IS NOT UNDER THE LINE OF CUTTING.



C. HOLD MATERIAL DOWN WITH A CLAMP.



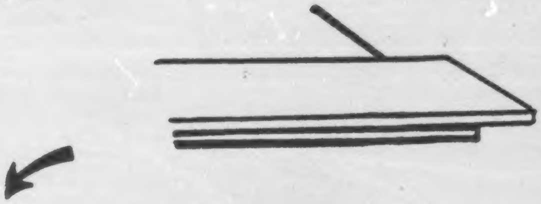
JOB STEPS

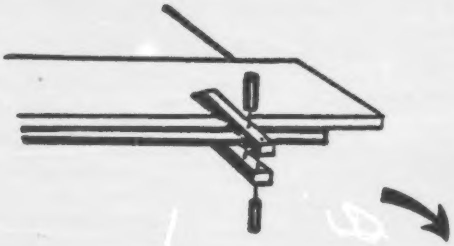
CAUTION:

D. KEEP FINGERS AWAY FROM THE BLADE

E. PUSH SLOWLY AND STRAIGHT WHEN CUTTING.

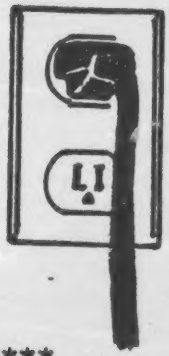
1. PUT MATERIAL ON TABLE OR BENCH SO THAT CUTTING LINE IS OVER THE EDGE.





2. HOLD MATERIAL DOWN WITH A TIGHT CLAMP.

3. PLUG THE CORD INTO AN OUTLET, KEEPING FINGERS AWAY FROM SAW SWITCH.



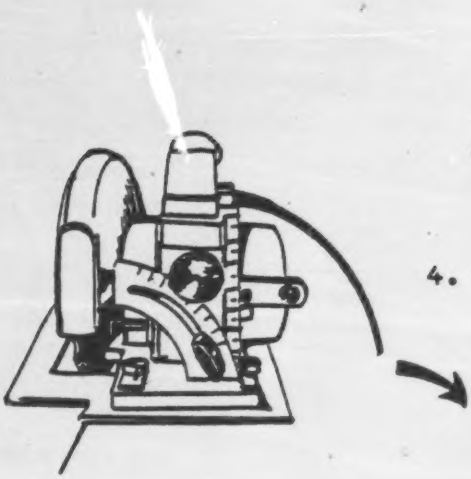
CAUTION:

BE SURE YOU KEEP THE CORD AWAY FROM THE BLADE.

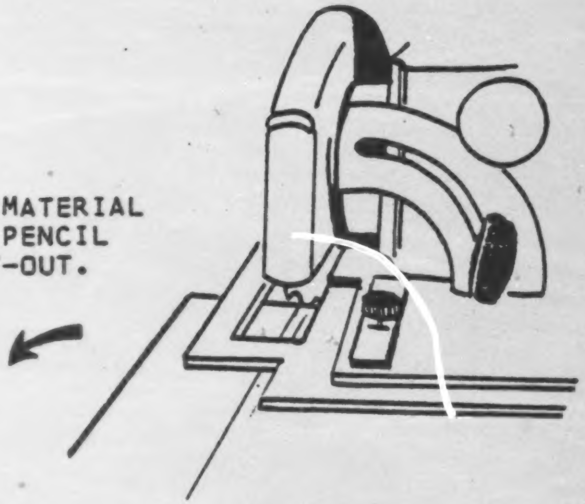
WORD GUIDE

CUT-OUT - A SIGHT ON THE SAW TO KEEP THE SAW ON A LINE.

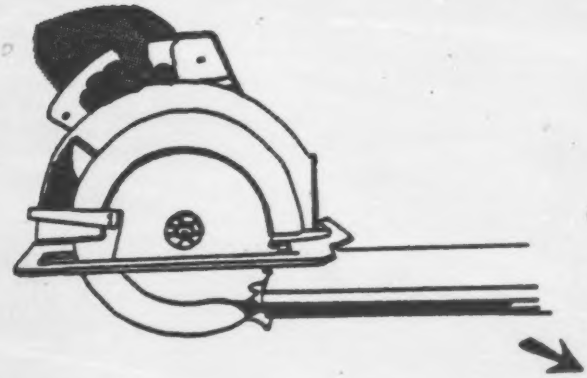
JOB STEPS



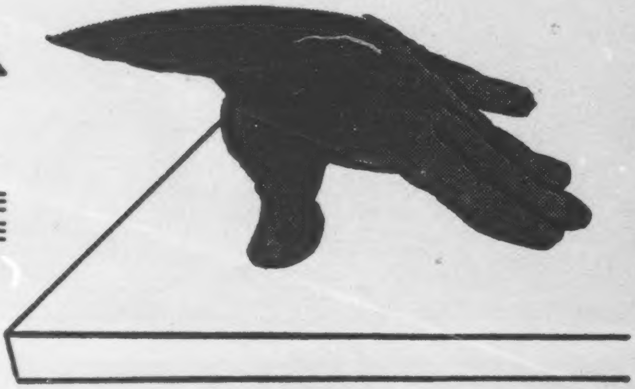
4. SET THE BLADE ANGLE TO CUT STRAIGHT UP AND DOWN.



5. PUT FRONT OF SAW ON MATERIAL SO THAT YOU CAN SEE PENCIL LINE THROUGH THE CUT-OUT.

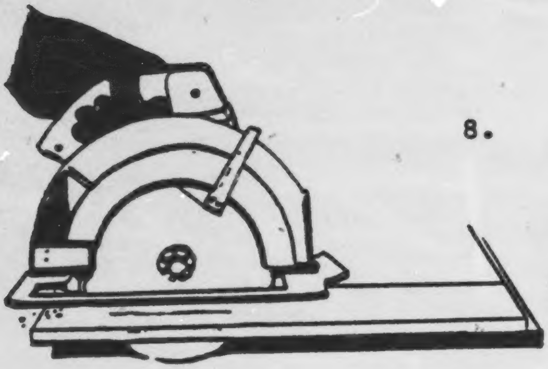


6. IF YOU ARE MAKING A LONG CUT, ASK YOUR INSTRUCTOR HOW TO USE THE SAW GUIDE.

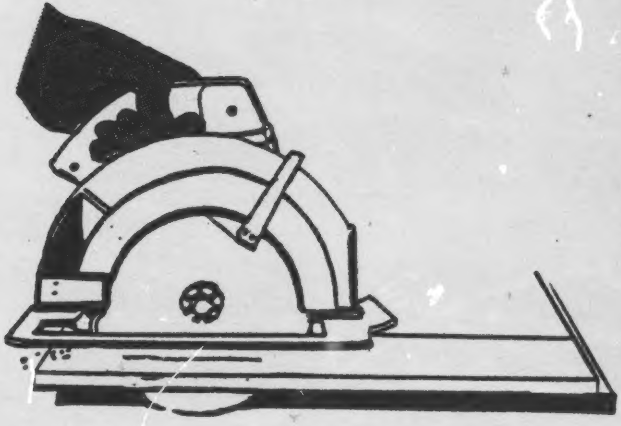


7. PLACE YOUR LEFT HAND ON TABLE SO THAT THUMB AND FINGERS ARE ON THE MATERIAL TO BE CUT. WEAR SAFETY GLASSES.

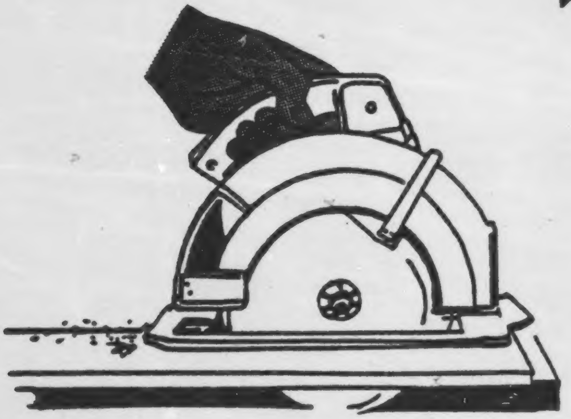
JOB STEPS



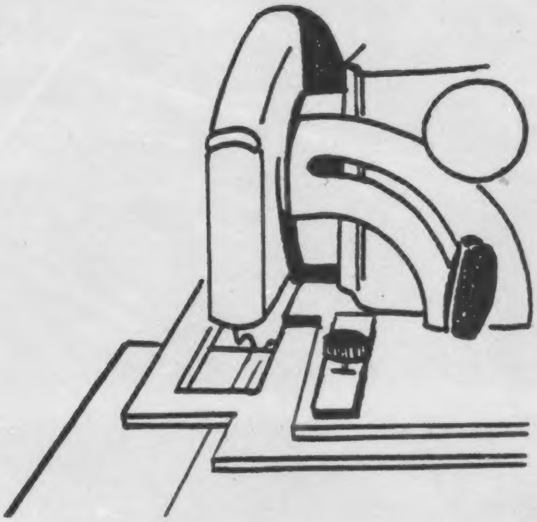
8. PRESS THE SWITCH AND PUSH SAW FORWARD WITH YOUR RIGHT HAND.



9. KEEP THE PENCIL LINE IN THE SAME PLACE IN THE CUT-OUT AS YOU PUSH SAW FORWARD.



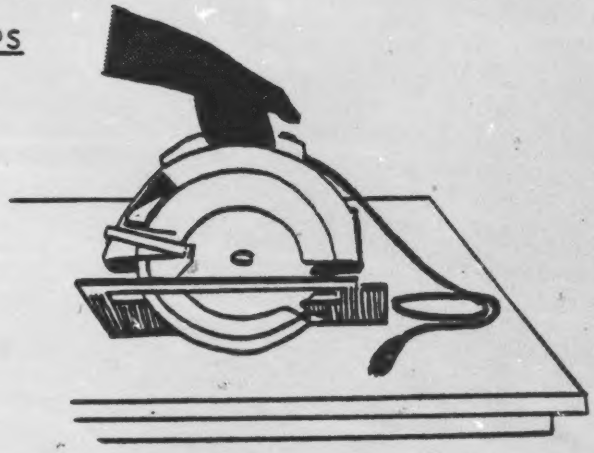
10. DO NOT PUSH FORWARD TOO FAST.



11. DO NOT STOP THE SAW UNTIL THE MATERIAL IS CUT.

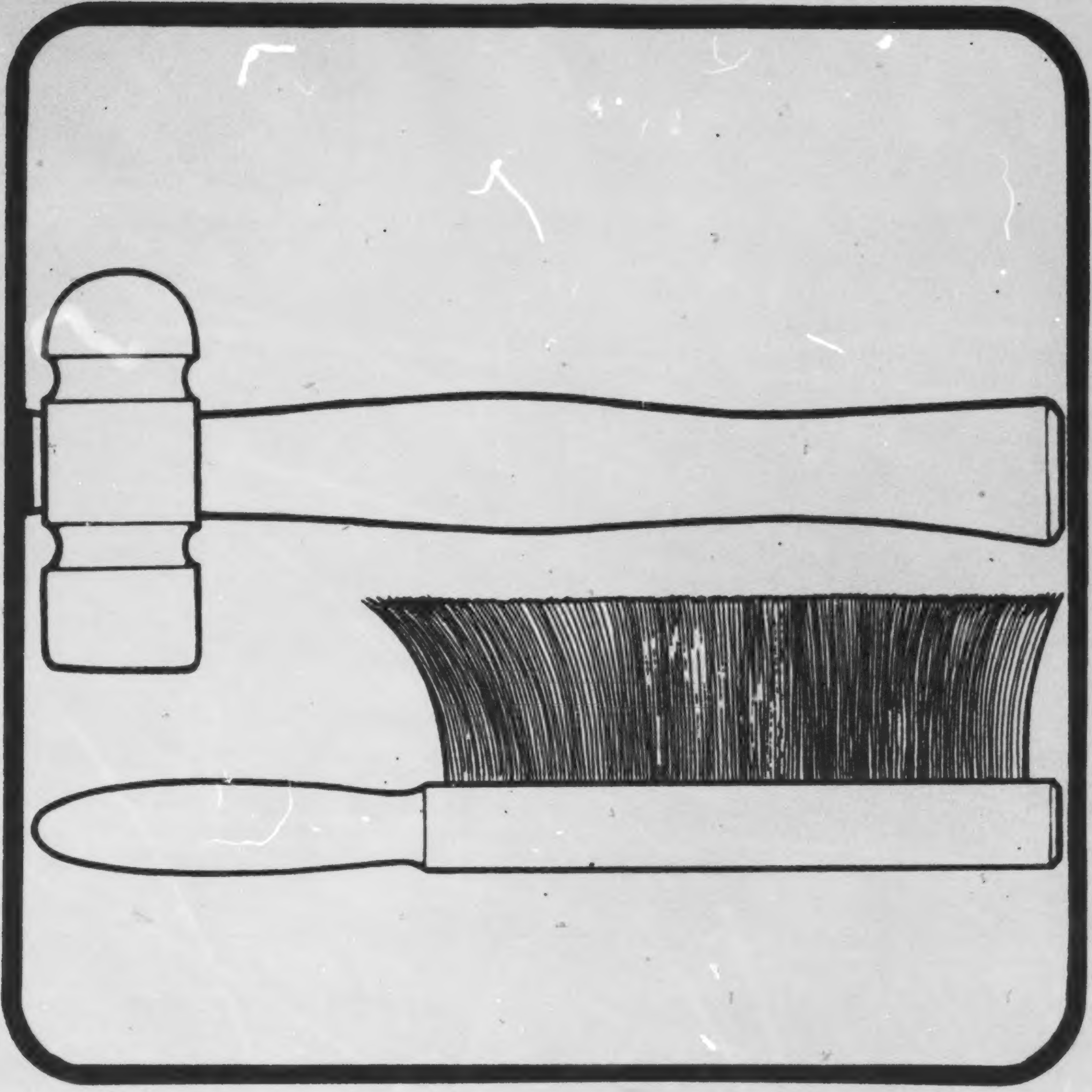
JOB STEPS

12. AFTER FINISHING THE CUT, TAKE FINGERS OFF THE SWITCH AND PUT THE SAW ON THE TABLE. UNPLUG CORD.



> CAUTION:
>
> BE SURE SAW GUARD IS OVER BLADE BEFORE SETTING ON TABLE.

13. SHOW THE PIECE OF WOOD THAT YOU HAVE CUT TO YOUR INSTRUCTOR.



building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 011 3 date: FEBRUARY 1977 level: ____

skill title: USING A SCREWMATE TOOL

developed & written by: MIKE POLEN

visuals by: BILL DRAPER

WORD GUIDE

SCREWMATE TOOL - USED TO MAKE A HOLE IN WOOD WHERE YOU WANT TO PUT A SCREW.

PERFORMANCE OBJECTIVE

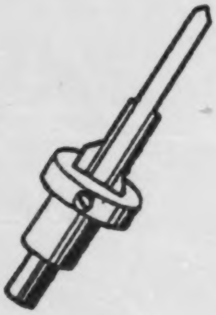
YOU ARE GOING TO LEARN:

HOW TO ADJUST AND USE THE SCREWMATE TOOL.

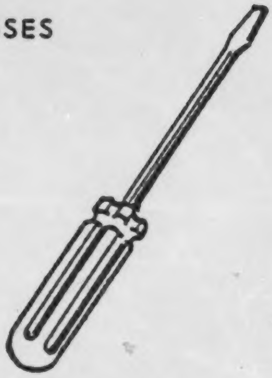
AND IN ORDER TO DO THIS YOU WILL NEED:

CHUCK WRENCH

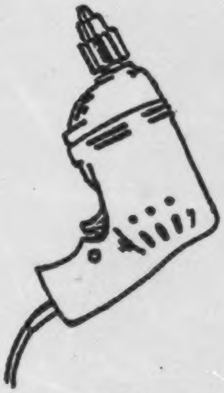
SAFETY GLASSES



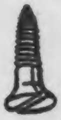
SCREWMATE TOOL



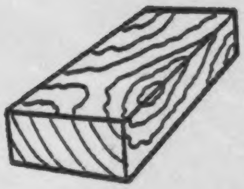
SCREWDRIVER



ELECTRIC DRILL



SCREW



WOOD

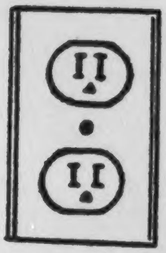
WE WILL KNOW YOU CAN DO IT WHEN:

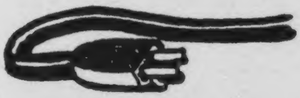
1. YOU HAVE ADJUSTED THE SCREWMATE TOOL TO THE SHAPE OF THE SCREW.
2. WHEN YOU HAVE DONE THE DRILLING, THE SCREW IS TURNED IN SO THAT THE HEAD OF THE SCREW IS AT LEAST 1/16 INCH BELOW THE WOOD TOP.

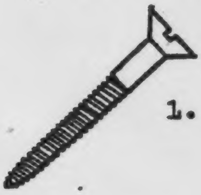
INFORMATION	MATERIALS	LOCATION OF MATERIALS
A SCREWMATE TOOL IS USED TO MAKE A HOLE IN WOOD WHERE WE WANT TO PUT A SCREW.		

JOB STEPS

CAUTION! UNPLUG THE DRILL BEFORE USING THE CHUCK WRENCH.

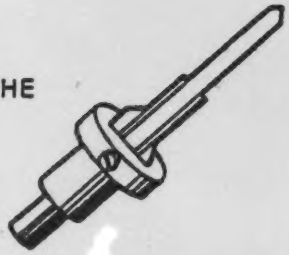




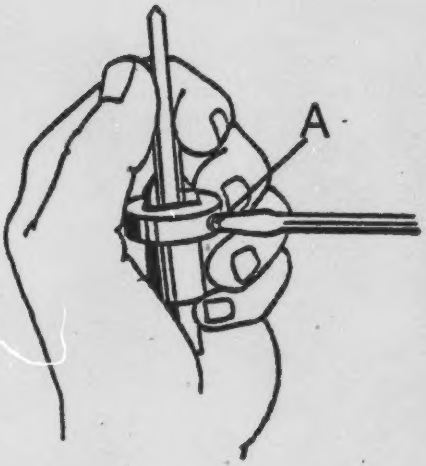


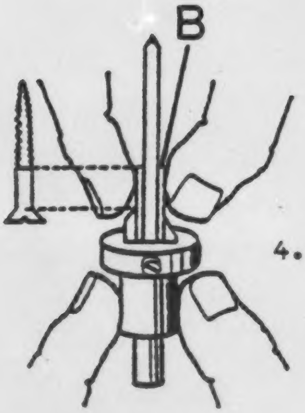
1. CHOOSE THE RIGHT SCREW FOR THE JOB. BE SURE IT IS THE RIGHT LENGTH AND THICKNESS.

2. GET THE SCREWMATE TOOL FOR THE SIZE SCREW YOU ARE USING.



3. LOOSEN THE SET SCREW (A) 1/4 TURN WITH A SCREWDRIVER.

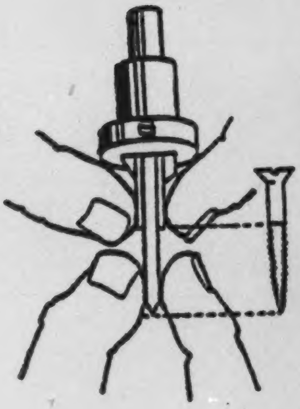


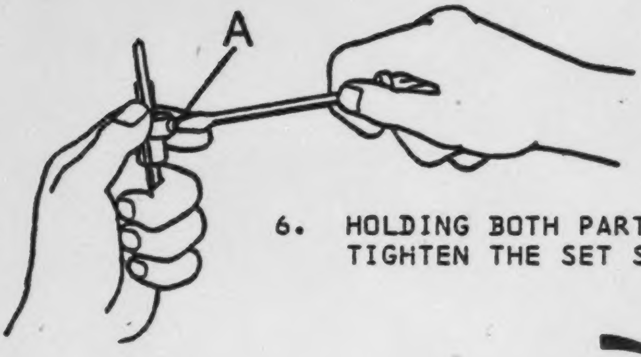


4. MOVE THE BLACK PART (B) UP OR DOWN SO THAT IT IS AS LONG AS THE SMOOTH PART OF THE SCREW.

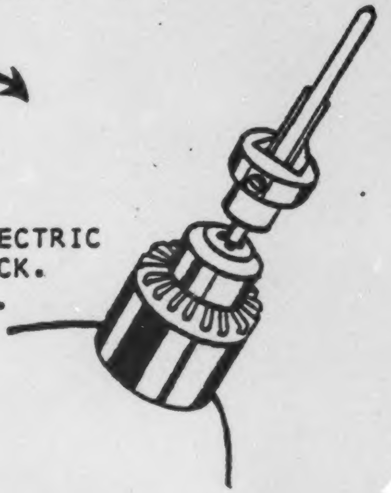
JOB STEPS

5. HOLD BLACK PART IN PLACE AND MOVE THE SMALLER PART SO THAT IT IS AS LONG AS THE THREAD LENGTH OF THE SCREW.

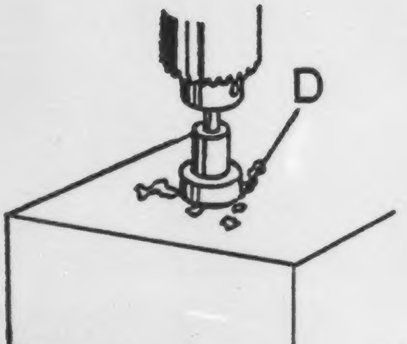




6. HOLDING BOTH PARTS IN PLACE, TIGHTEN THE SET SCREW (A).



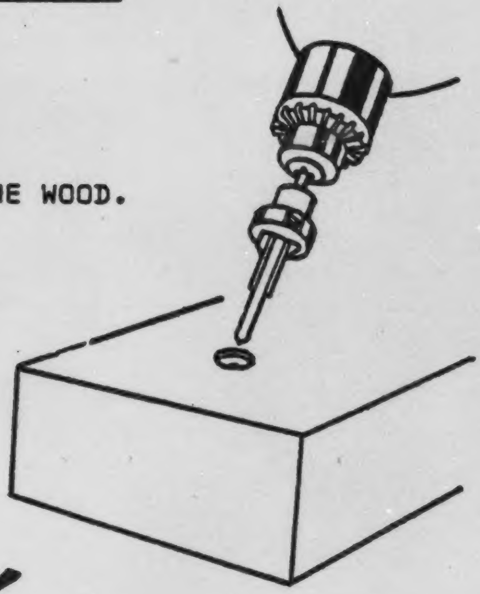
7. PUT THE TOOL IN AN ELECTRIC DRILL AND TIGHTEN CHUCK. PUT ON SAFETY GLASSES.

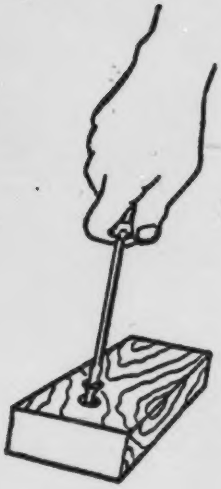


8. DRILL INTO THE PIECE OF WOOD TO POINT D.

JOB STEPS

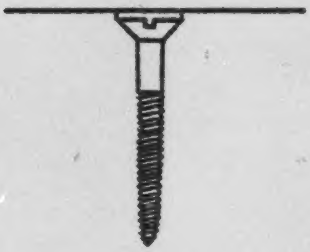
9. REMOVE FROM THE WOOD.





10. PLACE SCREW IN HOLE AND SCREW DOWN WITH SCREWDRIVER.

11. THE JOB SHOULD LOOK LIKE THIS WHEN DONE.



JOB STEPS

building maintenance & engineering

unit: CABINET CONSTRUCTION

capital area career center

module: 2201 21 001 3 date: 2/77 level: II

skill title: WORKING DIAGRAM (LAYOUT)

developed & written by: MIKE POLEN

visuals by: GLEN COOLEY

WORD GUIDE

WIDTH - HOW WIDE THE CABINET IS.

HEIGHT - HOW HIGH THE CABINET IS.

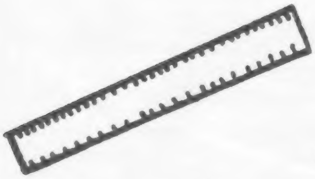
DEPTH - HOW FAR THE CABINET IS FROM FRONT TO BACK.

PERFORMANCE OBJECTIVE

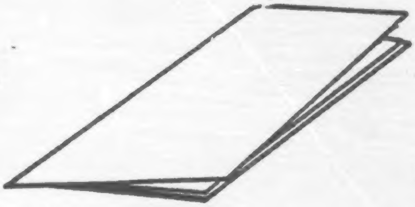
YOU ARE GOING TO LEARN:

HOW TO MAKE A DRAWING (LAYOUT) OF A CABINET.

AND IN ORDER TO DO THIS YOU WILL NEED:



A RULER



DRAWING PAPER

A PENCIL

WE WILL KNOW YOU CAN DO IT WHEN:

ALL MEASUREMENTS FOR HEIGHT, DEPTH, AND WIDTH ARE ON YOUR DRAWING, AND BY LOOKING AT THE DRAWING YOU CAN CUT ALL PIECES TO FIT.

WORD GUIDE

SCALE - A PICTURE ON PAPER OF SOMETHING REAL, WITH ALL SIZE RELATING THE SAME ON THE PAPER AS ON THE OBJECT.

INFORMATION

REMEMBER, THE SCALE FOR YOUR DRAWING IS:

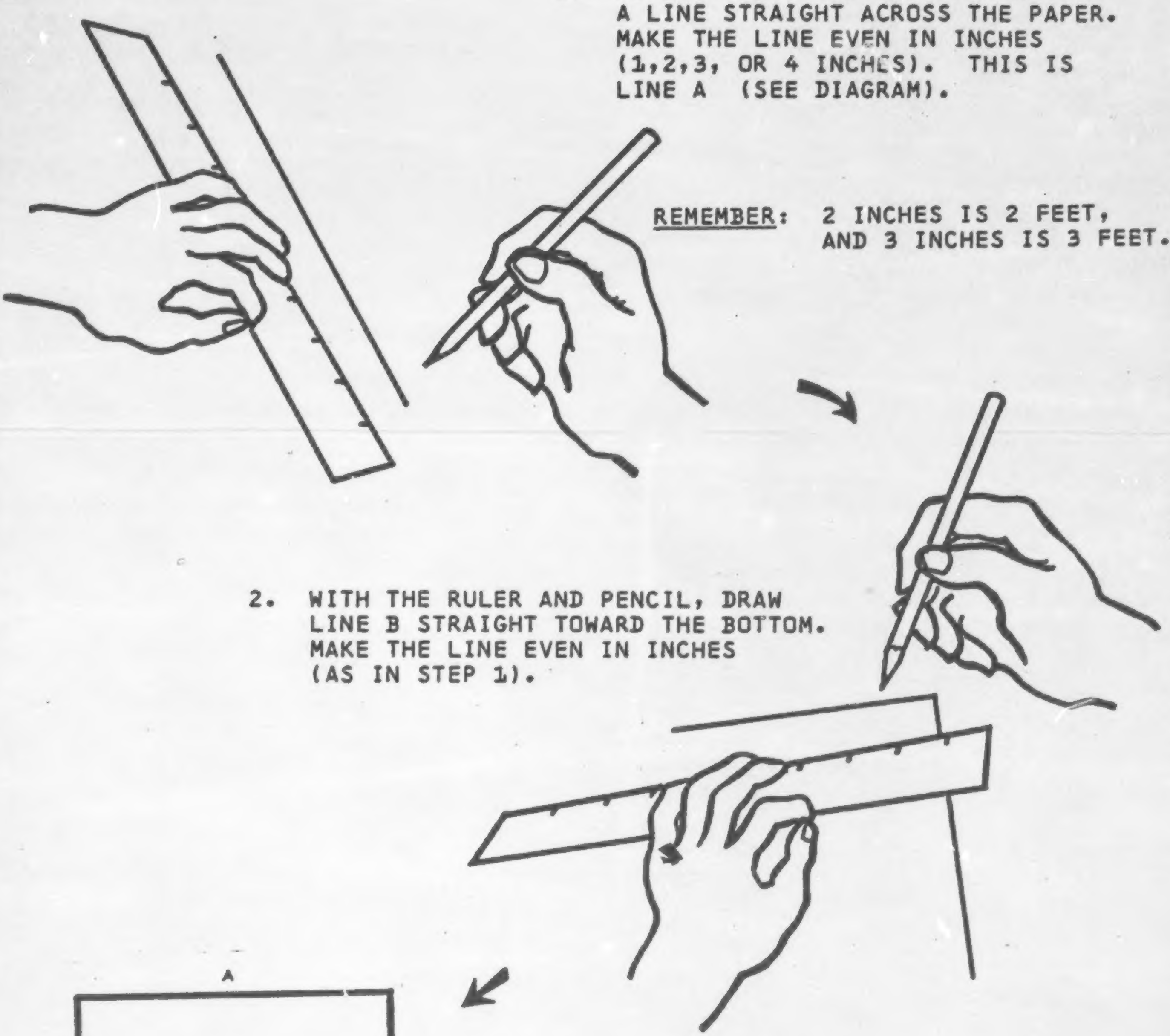
1 INCH = 1 FOOT.

SO, A LINE THAT IS ONE INCH LONG ON PAPER WILL BE ONE FOOT LONG ON YOUR CABINET.

YOUR DRAWING WILL NOT BE EXACT, SO DON'T WORRY ABOUT IT. ITS PURPOSE IS TO LET YOU HAVE AN IDEA OF YOUR CABINET, RATHER THAN TO BE AN EXACT PICTURE OF IT.

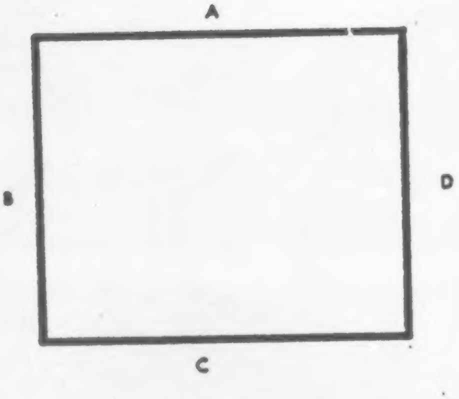
JOB STEPS

1. WITH A RULER AND PENCIL, DRAW A LINE STRAIGHT ACROSS THE PAPER. MAKE THE LINE EVEN IN INCHES (1,2,3, OR 4 INCHES). THIS IS LINE A (SEE DIAGRAM).



REMEMBER: 2 INCHES IS 2 FEET, AND 3 INCHES IS 3 FEET.

2. WITH THE RULER AND PENCIL, DRAW LINE B STRAIGHT TOWARD THE BOTTOM. MAKE THE LINE EVEN IN INCHES (AS IN STEP 1).



3. DRAW LINE D, THEN LINE C.

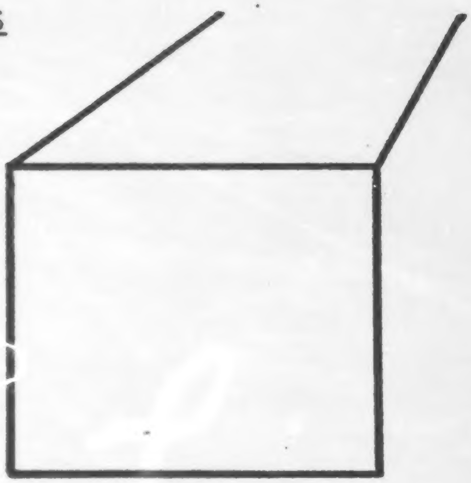
CHECK YOUR WORK WITH A RULER:

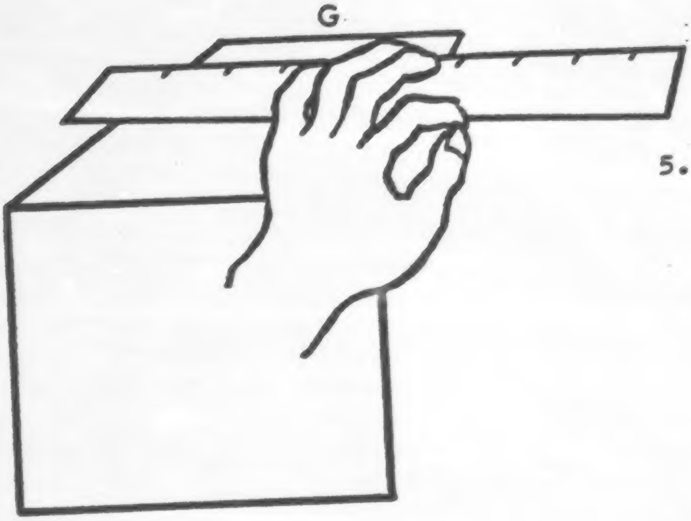
A. LINES A AND C SHOULD BE THE SAME LENGTH.

B. LINES B AND D SHOULD BE THE SAME LENGTH.

JOB STEPS

4. WITH THE RULER AND PENCIL, DRAW LINES E AND F.





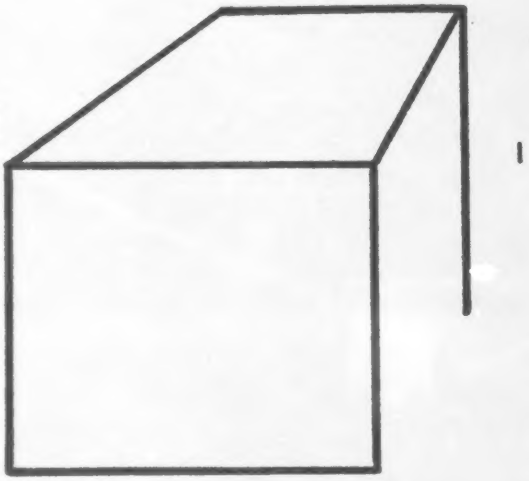
5. CONNECT LINES E AND F WITH LINE G.

CHECK YOUR WORK WITH A RULER:

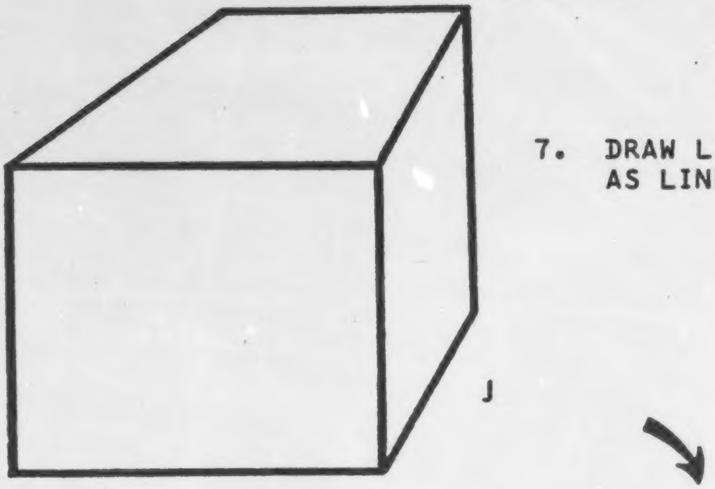
A. LINES E AND F SHOULD BE THE SAME LENGTH.

B. LINES G AND A SHOULD BE THE SAME LENGTH.

6. DRAW LINE I THE SAME LENGTH AS LINE D.

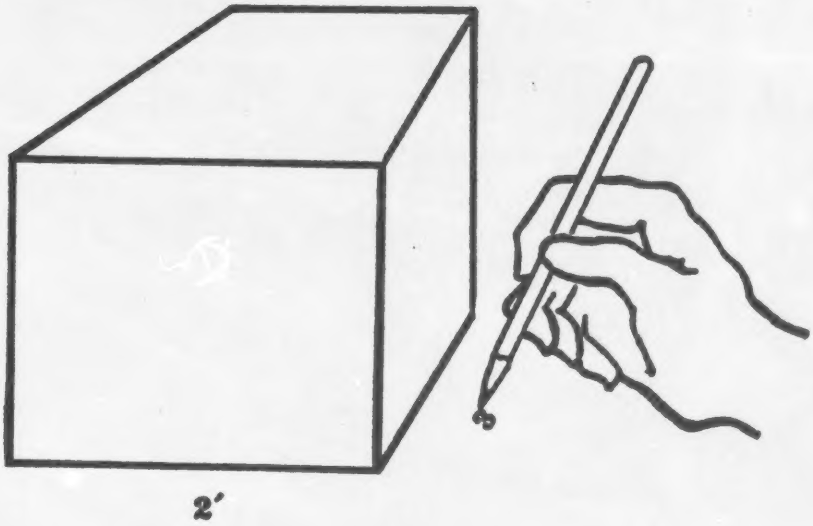


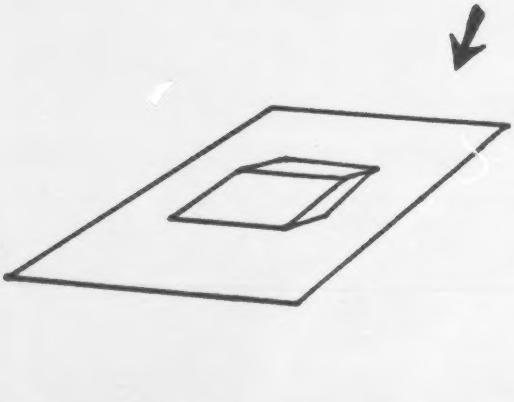
JOB STEPS



7. DRAW LINE J THE SAME LENGTH AS LINE F.

8. WRITE IN FEET (NOT INCHES) THE WIDTH, HEIGHT, AND DEPTH OF YOUR CABINET.





9. TAKE YOUR CABINET LAYOUT TO YOUR INSTRUCTOR.

building maintenance & engineering

unit: CABINET CONSTRUCTION

capital area career center

module: 2201 21 002 3 date: 2/77 level: II

skill title: CUTTING PARTS FOR FABRICATION

developed & written by: MIKE POLEN

visuals by:

WORD GUIDE

FABRICATION - PUTTING TOGETHER

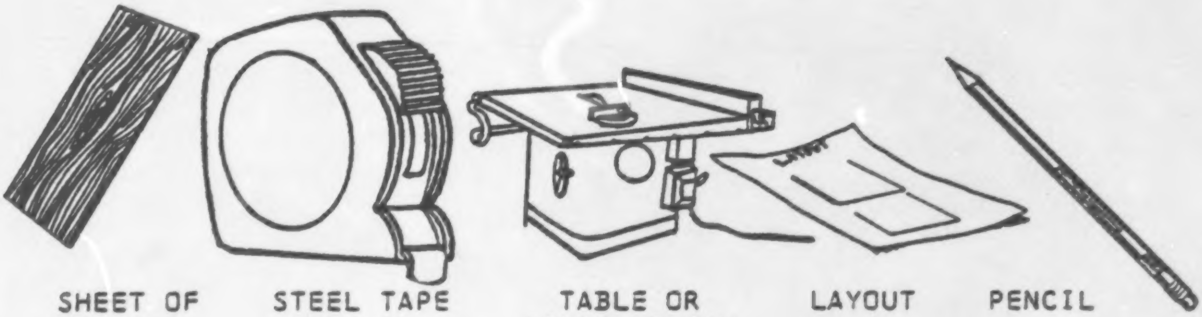
PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO FOLLOW A LAY-OUT IN CUTTING OUT PIECES OF CABINET.

AND IN ORDER TO DO THIS YOU WILL NEED:

SAFETY GLASSES



SHEET OF PLYWOOD STEEL TAPE MEASURE TABLE OR CIRCULAR SAW LAYOUT PENCIL

WE WILL KNOW THAT YOU CAN DO IT WHEN:

YOU HAVE MEASURED AND CUT ALL THE PIECES OF THE CABINET SO THAT THEY CAN BE FIT.

INFORMATION

BEFORE CUTTING PIECES FOR YOUR CABINET, YOU MUST HAVE STUDIED:

MODULE - 2201 20 004N, OPERATION OF TABLE SAW

MODULE - 2201 20 005N, OPERATION OF CIRCULAR SAW

IF YOU HAVE NOT COMPLETED THE GOALS FOR THOSE MODULES, YOU ARE NOT READY TO DO THIS MODULE.

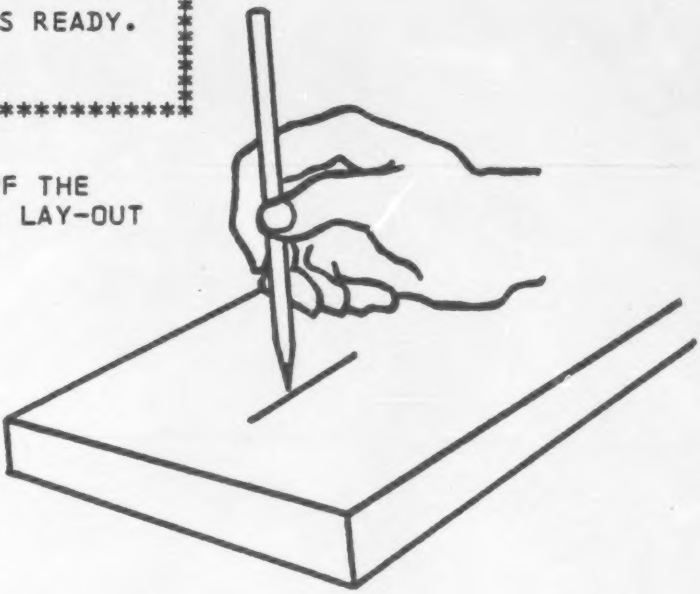
THINK: SAFETY FIRST!

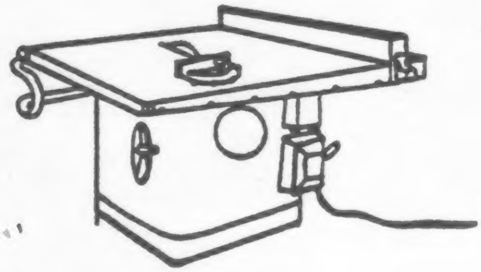
JOB STEPS

CAUTION:

1. BE SURE SAW GUARD IS IN PLACE.
2. BE SURE SAW BLADES ARE SHARP.
3. BE SURE THERE IS NO TRASH ON FLOOR.
4. REMEMBER TO HAVE ALL TOOLS READY.

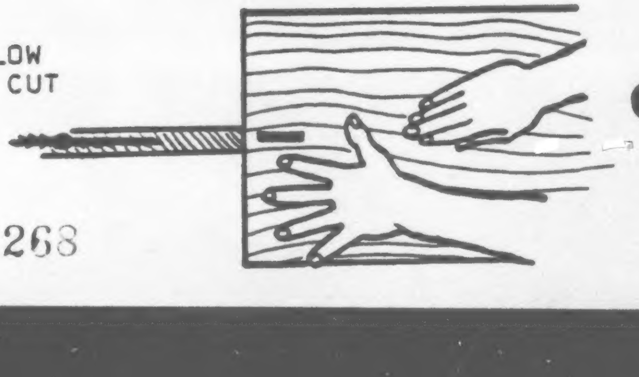
1. MEASURE AND MARK ALL PIECES OF THE CABINET ON PLYWOOD. USE YOUR LAY-OUT FOR RIGHT MEASURE.





2. SET UP THE SAW AS YOU DID IN THE MODULE ON USING THE SAW. WEAR SAFETY GLASSES.

3. MAKE ALL RIP CUTS FIRST. FOLLOW YOUR PENCIL MARKS, BUT DO NOT CUT THEM.

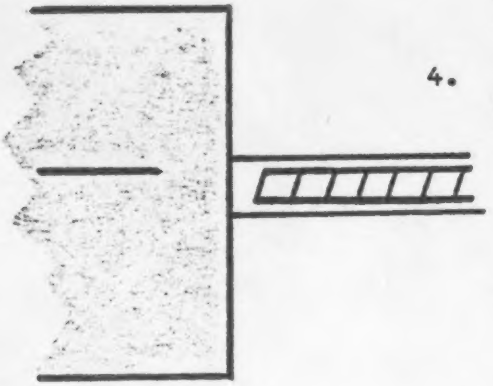


WORD GUIDE

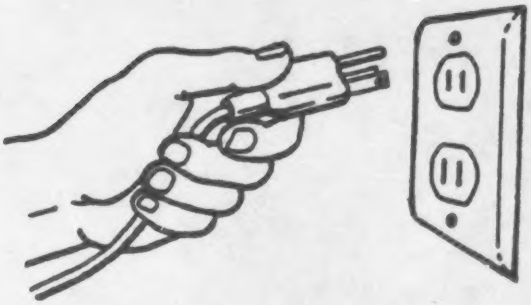
RIP CUTS - SAW CUTS WITH THE GRAIN.

CROSS CUTS - SAW CUTS ACROSS THE GRAIN.

JOB STEPS



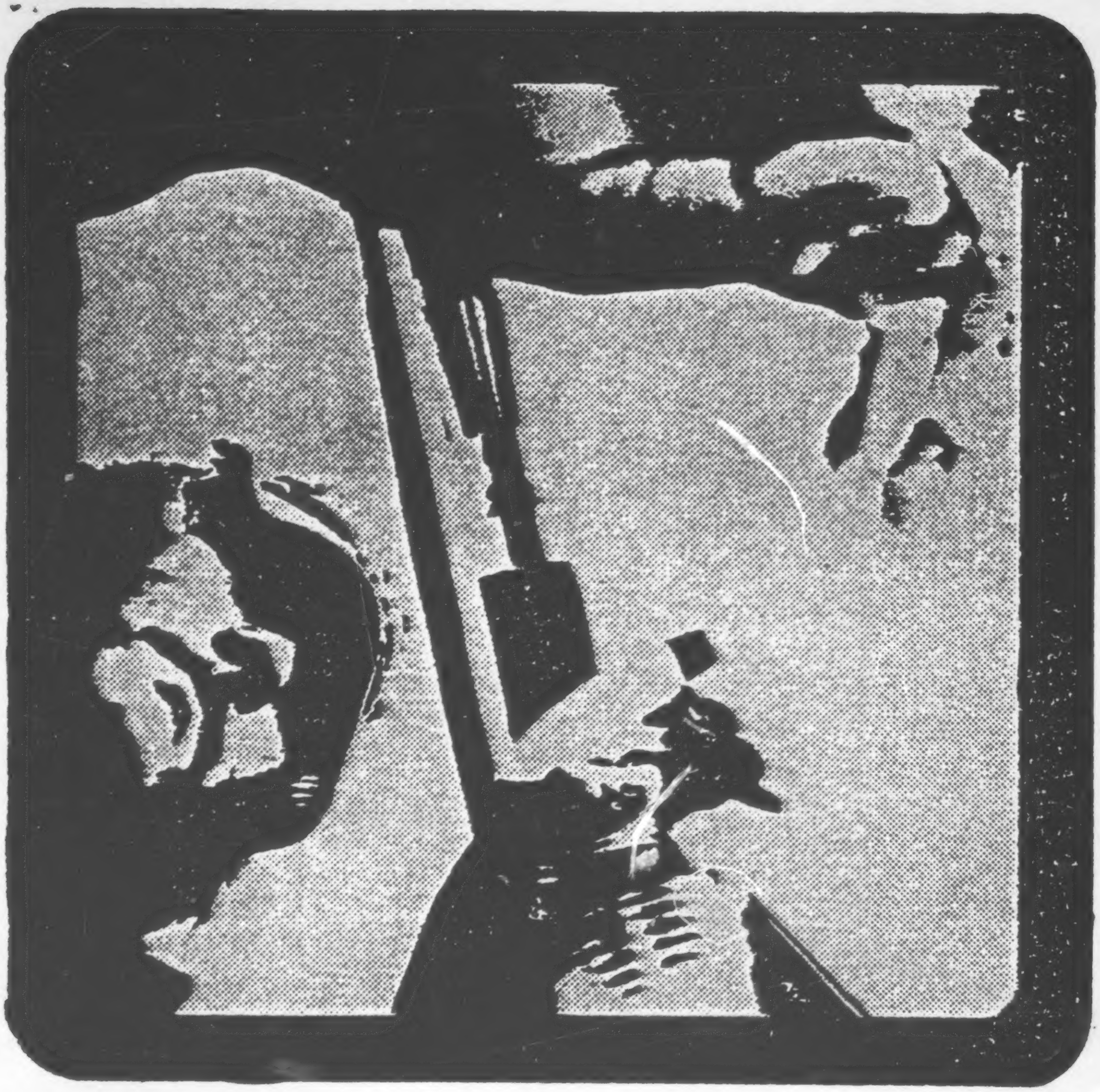
4. THEN MAKE CROSS-CUTS. FOLLOW MARKS, BUT DO NOT CUT THEM.



5. WHEN ALL PIECES ARE CUT, UNPLUG THE SAW.

6. CHECK THE MEASUREMENTS ON YOUR PIECES.

7. SHOW THE CUT PIECES TO YOUR INSTRUCTOR.



building maintenance & engineering

unit: CABINET CONSTRUCTION

capital area career center

module: 2201 21 003 3 date: 2/77 level: 11

skill title: CONSTRUCT CABINET

developed & written by: MIKE POLEN

visuals by: BILL DRAPER

WORD GUIDE

SQUARE - STRAIGHT AND EVEN.

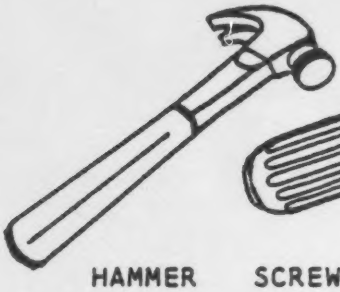
JOINTS - PLACES WHERE PARTS COME TOGETHER.

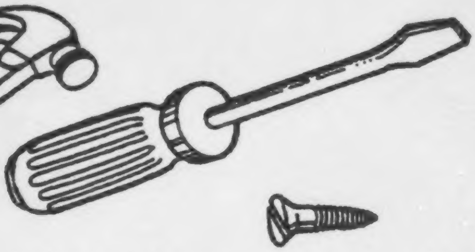
PERFORMANCE OBJECTIVE

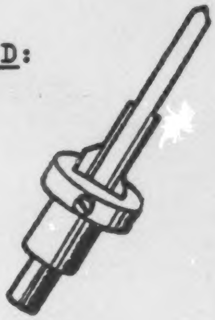
YOU ARE GOING TO LEARN:

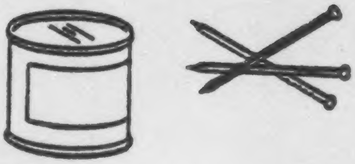
HOW TO PUT TOGETHER THE CABINET PARTS.

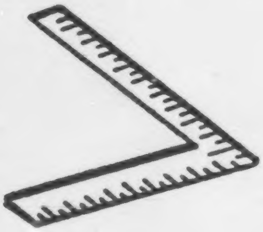
AND IN ORDER TO DO THIS YOU WILL NEED:

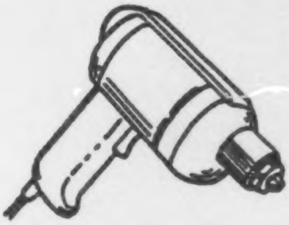

HAMMER

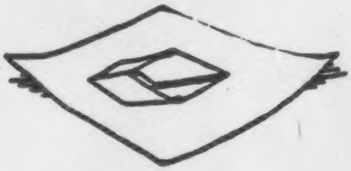

SCREWDRIVER & SCREWS


SCREWMATE TOOL


NAILS & GLUE


CARPENTER'S SQUARE


ELECTRIC HAND DRILL


LAYOUT DRAWING

SAFETY GLASSES

WE WILL KNOW YOU CAN DO IT WHEN:

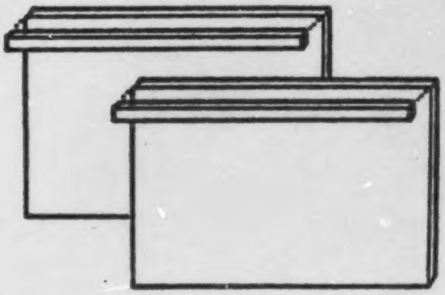
YOU HAVE PUT TOGETHER ALL THE CABINET PARTS SO THAT THE CABINET IS SQUARE AND THE JOINTS ARE SOLID.

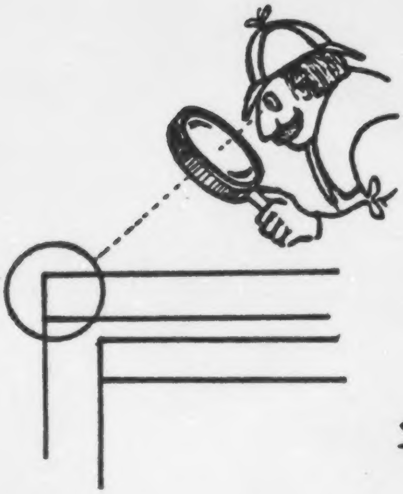
WORD GUIDE

FLUSH - EVEN AND STRAIGHT AT EDGES AND JOINTS.

JOB STEPS

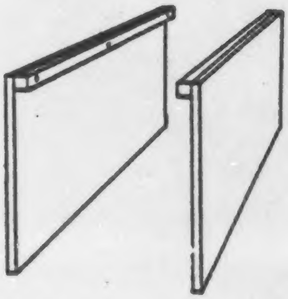
1. PLACE A 3/4 INCH SQUARE PIECE OF WOOD ON THE TOP EDGE OF BOTH SIDE PIECES. THEY MUST BE FLUSH ON TOP.



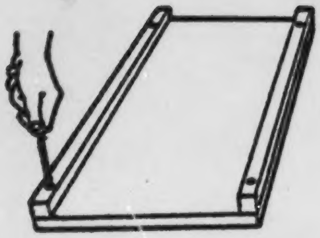


2. CHECK TO SEE THAT SQUARE PIECES ARE NO LONGER THAN THE SIDE PIECES.

3. GLUE ONE SIDE OF THE SQUARE PIECES AND SCREW THEM TO THE SIDE PIECES.

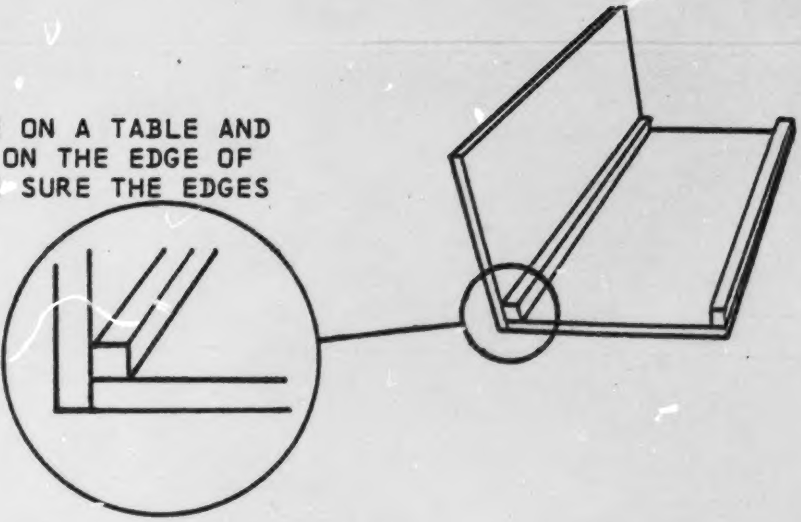


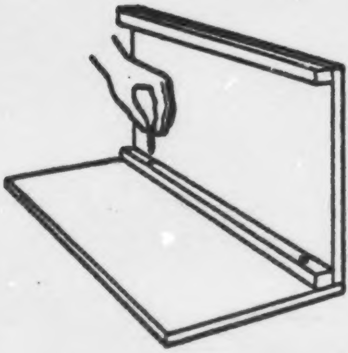
JOB STEPS



4. DO THE SAME WITH TWO MORE 3/4 INCH SQUARE PIECES ON THE BOTTOM EDGE OF THE SIDE PIECES.

5. PLACE THE TOP PIECE ON A TABLE AND PUT ONE SIDE PIECE ON THE EDGE OF THE SIDE PIECE. BE SURE THE EDGES ARE FLUSH.

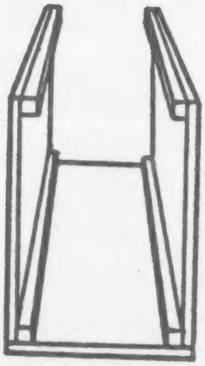


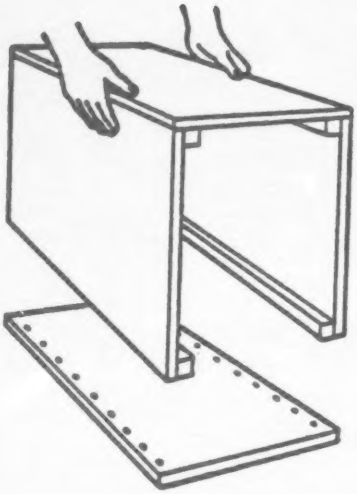


6. GLUE AND SCREW THE TOP AND A SIDE PIECE TOGETHER. GLUE AND SCREWS MUST BE PUT ON THE 3/4 INCH SQUARE PIECE.

JOB STEPS

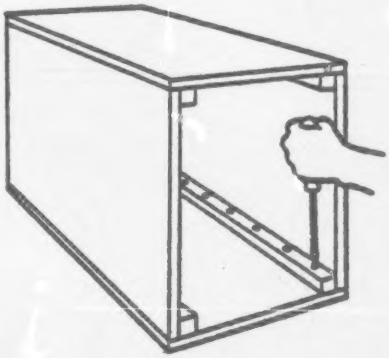
7. DO STEP 5 AND 6 WITH THE OTHER SIDE PIECE.

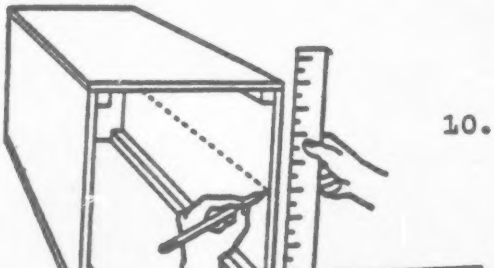




8. PLACE THE BOTTOM SHELF PIECE ON THE TABLE AND SET THE TOP AND SIDE PIECES ON EACH SIDE.

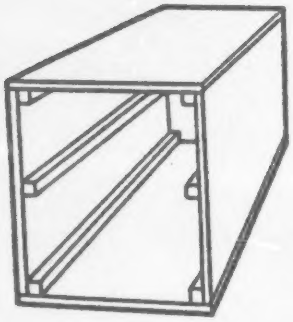
9. GLUE AND SCREW THE BOTTOM PIECE TO THE 3/4 INCH SQUARE PIECES ON EACH SIDE.



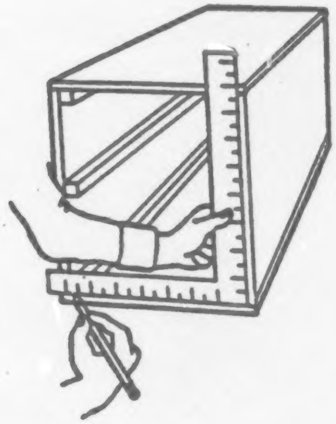


10. MEASURE HALF-WAY UP THE SIDES AND DRAW A LINE ACROSS THE INSIDE OF THE SIDE PIECE.

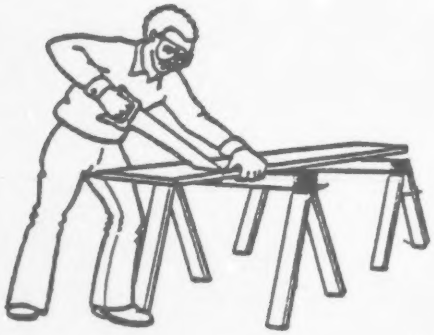
JOB STEPS



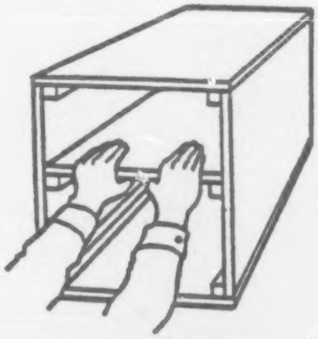
11. GLUE AND SCREW A 3/4 INCH SQUARE PIECE JUST BELOW THE LINES YOU HAVE DRAWN. BE SURE TO DO EACH SIDE.



12. MEASURE THE DISTANCE BETWEEN YOUR TWO SIDE PIECES. BE SURE TO MEASURE FROM THE INSIDE EDGE.



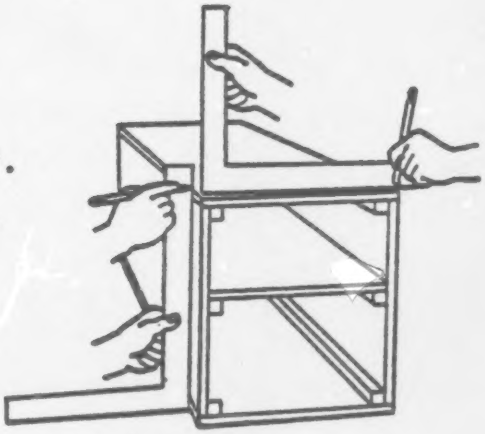
13. CUT THE MIDDLE SHELF TO FIT THE DISTANCE YOU MEASURED IN STEP 12. WEAR SAFETY GLASSES.

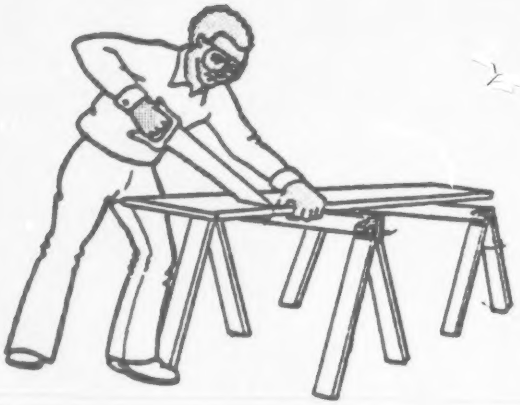


14. PUT THE SHELF ON THE 3/4 INCH SQUARE SIDE PIECES. GLUE AND SCREW THE SHELF TO THE SIDE SQUARE PIECES.

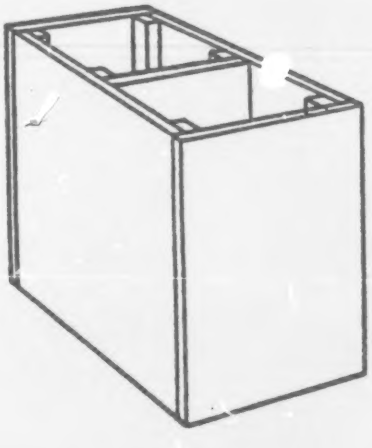
JOB STEPS

15. MEASURE THE OUTSIDE BACK OF YOUR CABINET. BE SURE TO MEASURE FROM THE OUTSIDE EDGES. WRITE DOWN THE HEIGHT AND WIDTH.

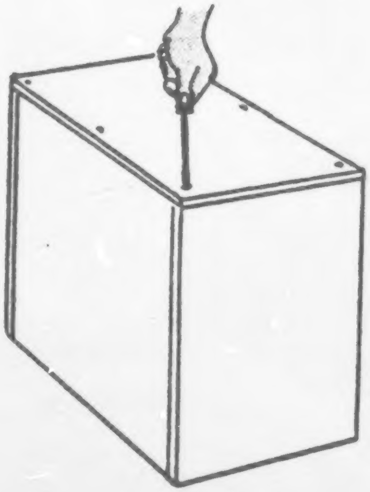




16. CUT THE BACK PIECE WHICH YOU MEASURED IN STEP 15.



17. PLACE THE CABINET FRONT-DOWN ON THE FLOOR.



18. PUT THE BACK SIDE IN PLACE AND SCREW IT ON BY PUTTING SCREWS INTO THE SQUARE PIECES.

JOB STEPS

19. ASK YOUR INSTRUCTOR IF YOU ARE READY TO PUT ON THE DOOR.

20. CLEAN UP WORK AREA.

building maintenance & engineering

unit: CONSTRUCT CABINETS

capital area career center

module: 2201 21 004 3 date: 2/77 level:

skill title: FABRICATE DOORS - INSET

developed & written by: MIKE POLEN

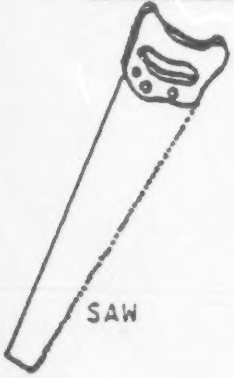
visuals by: CHUCK KNOCK

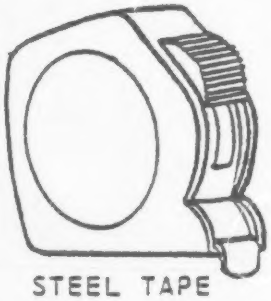
PERFORMANCE OBJECTIVE

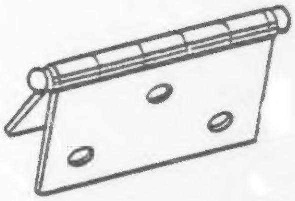
YOU ARE GOING TO LEARN:

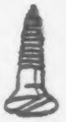
HOW TO MAKE INSET DOORS FOR CABINETS.

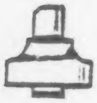
AND IN ORDER TO DO THIS YOU WILL NEED:


SAW


STEEL TAPE


HINGES


SCREWS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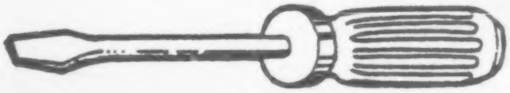
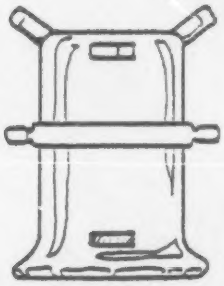
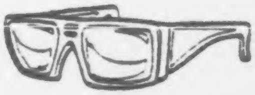

SCREWDRIVER


ROUTER

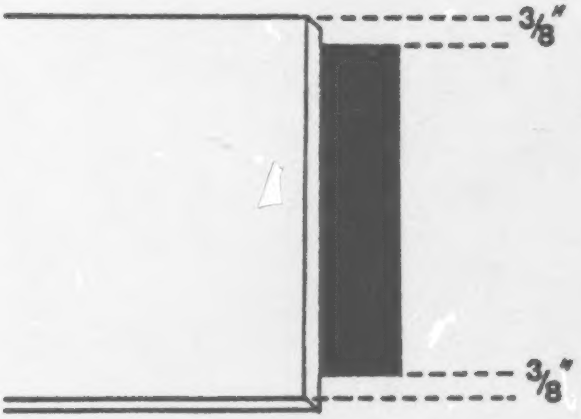

SAFETY GLASSES

WE WILL KNOW YOU CAN DO IT WHEN:

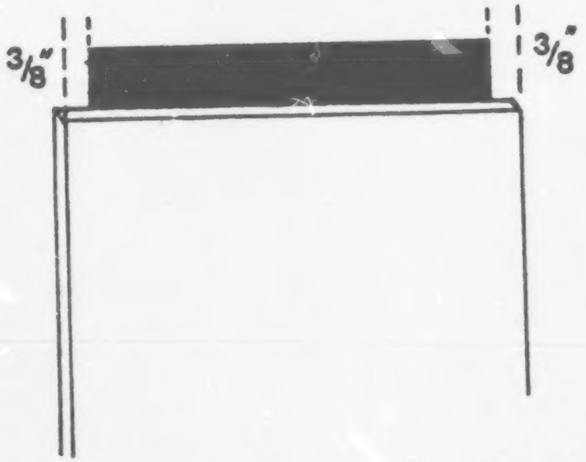
YOU HAVE CUT A DOOR TO FIT A CABINET OPENING AND HAVE PUT ON THE HINGES SO WELL THAT THE DOOR WILL NOT STICK WHEN USED.

JOB STEPS

DOUBLE DOORS



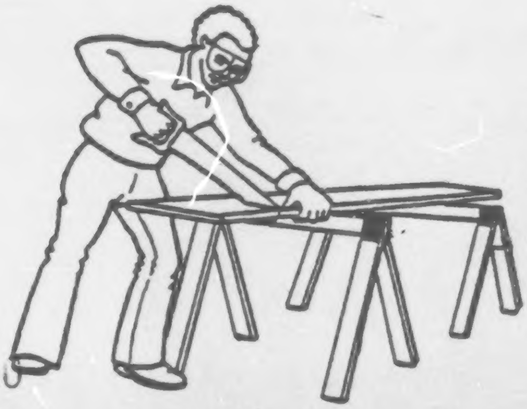
1. MEASURE DOOR OPENING. THE HEIGHT OF DOOR MUST BE 3/4 INCH LONGER THAN THE OPENING (3/8 INCH ON TOP AND BOTTOM). SEE EXAMPLE.



2. MEASURE DOOR WIDTH. MUST BE 3/8 INCH WIDER THAN HALF (1/2) THE TOTAL WIDTH OF THE OPENING. SEE EXAMPLE.

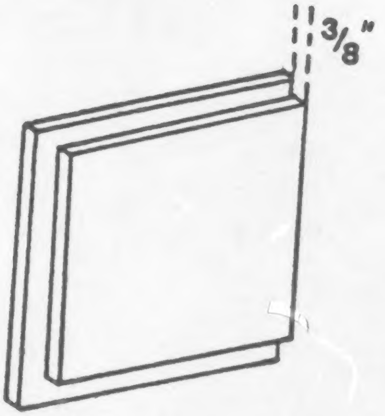
EXAMPLE: IN THE EXAMPLE ABOVE, THE OPENING IS 24 INCHES HIGH AND 18 INCHES WIDE. SO EACH DOOR MUST BE 24 AND 3/4 INCHES HIGH AND 9 AND 3/8 INCHES WIDE. SEE YOUR INSTRUCTOR IF YOU DO NOT UNDERSTAND.

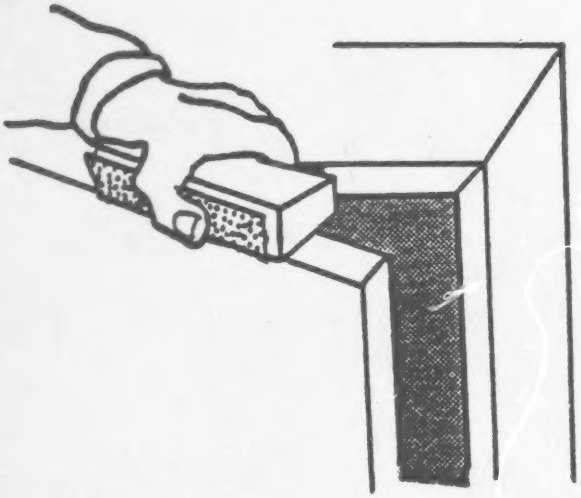
3. CUT THE TWO DOOR PIECES IF YOU ARE SURE YOU HAVE MEASURED RIGHT. WEAR SAFETY GLASSES.



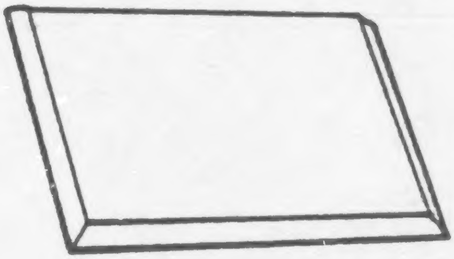
JOB STEPS

4. ROUT OUT 3/8 INCH DEEP AND 3/8 INCH WIDE ON THE TOP, BOTTOM, AND HINGE SIDE OF BOTH DOORS.

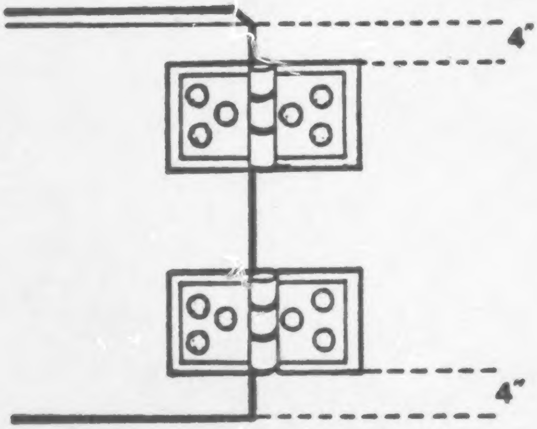




5. TRY DOORS IN OPENING BEFORE PUTTING ON HINGE. SAND OR TRIM TO FIT.



6. USE THE ROUTER TO TRIM EDGES ON TOP, BOTTOM AND ONE SIDE.



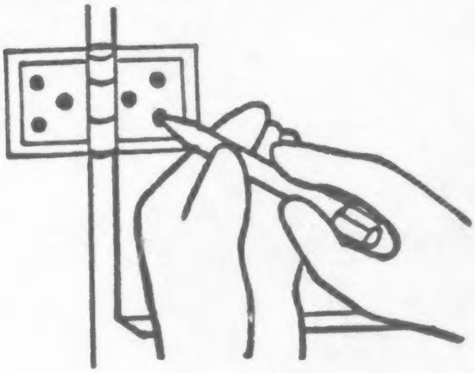
7. PUT HINGES 4 INCHES DOWN FROM TOP AND 4 INCHES UP FROM BOTTOM ON THE UNROUTED SIDE.

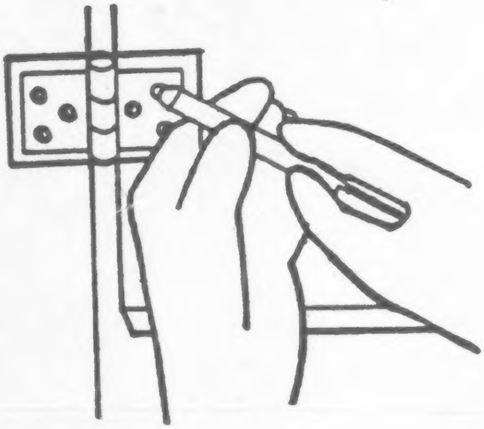
WORD GUIDE

CENTER PUNCH -

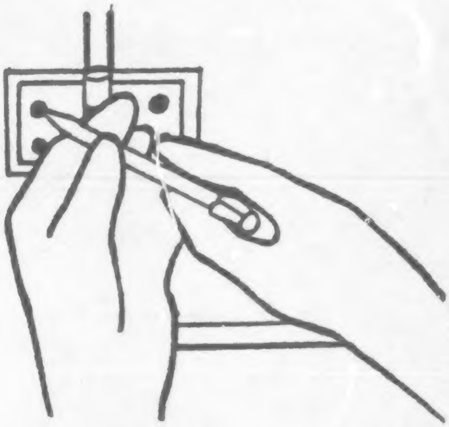
JOB STEPS

8. CENTER PUNCH SCREW HOLES IN DOOR.

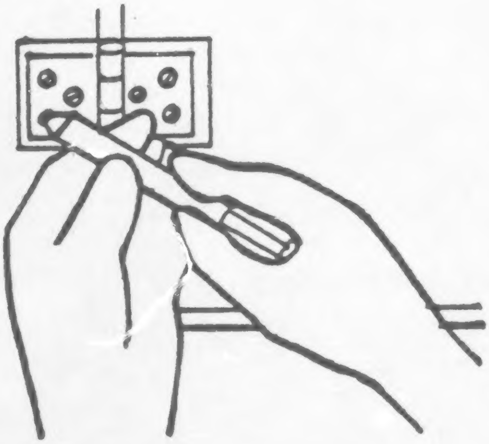




9. INSERT SCREWS.

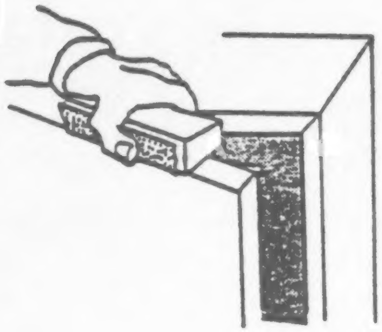


10. CENTER PUNCH HOLES IN CABINET TRIM.

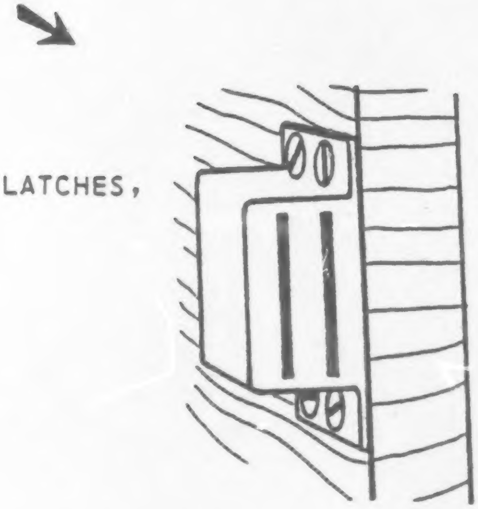


11. INSERT SCREWS.

JOB STEPS



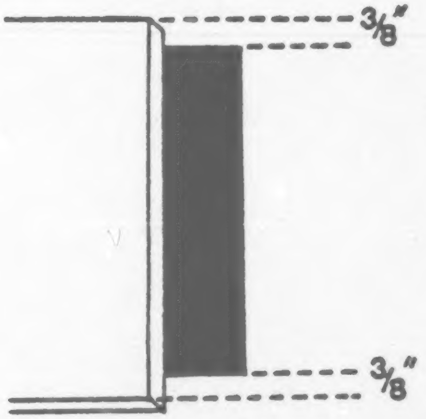
12. ADJUST TO OPEN AND CLOSE WITHOUT STICKING. (SAND TO FIT).

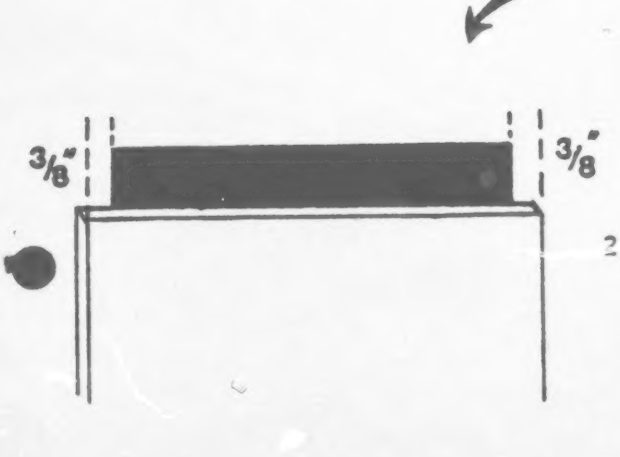


13. TO PUT ON MAGNETIC DOOR LATCHES, SEE YOUR INSTRUCTOR.

SINGLE DOOR

1. MEASURE DOOR OPENING. THE HEIGHT OF DOOR MUST BE 3/4 INCH LONGER THAN THE OPENING (3/8 INCH ON TOP AND BOTTOM). SEE EXAMPLE.

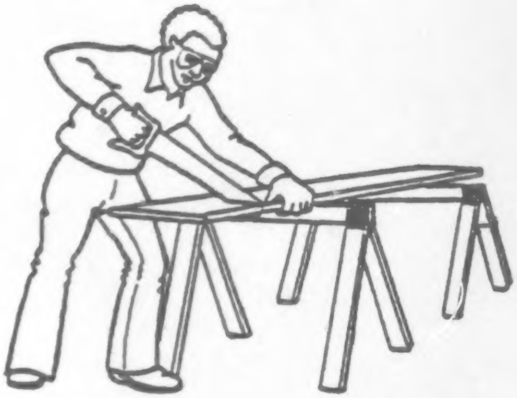




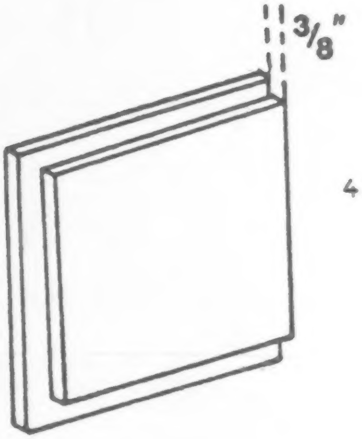
2. MEASURE DOOR WIDTH. MUST BE 3/4 INCH WIDER THAN TOTAL WIDTH OF OPENING (3/8 INCH ON EACH SIDE). SEE EXAMPLE.

JOB STEPS

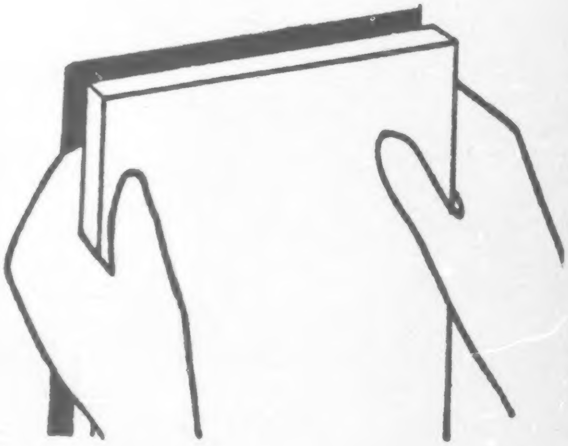
EXAMPLE: IN THE EXAMPLE ABOVE, THE OPENING IS 24 INCHES HIGH AND 18 INCHES WIDE. SO THE DOOR MUST BE 24 AND 3/4 INCHES HIGH AND 18 AND 3/4 INCHES WIDE.



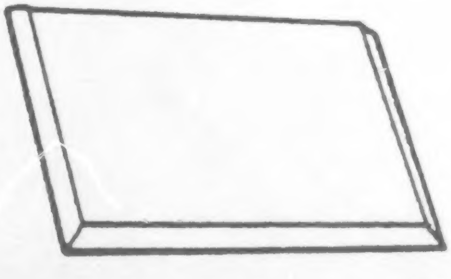
3. CUT THE DOOR IF YOU ARE SURE YOU HAVE MEASURED RIGHT.



4. ROUT OUT 3/8 INCH DEEP AND 3/8 INCH WIDE ALL AROUND THE DOOR.



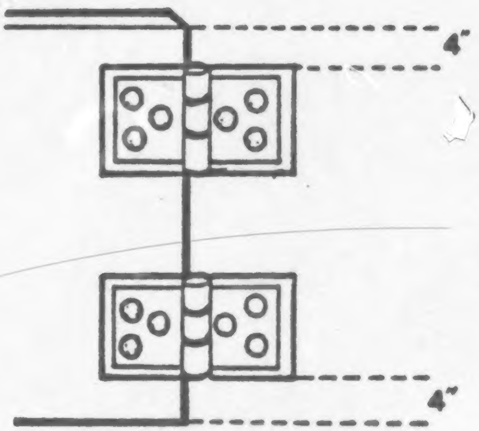
5. TRY DOOR IN OPENING BEFORE PUTTING ON HINGE. SAND OR TRIM TO FIT.

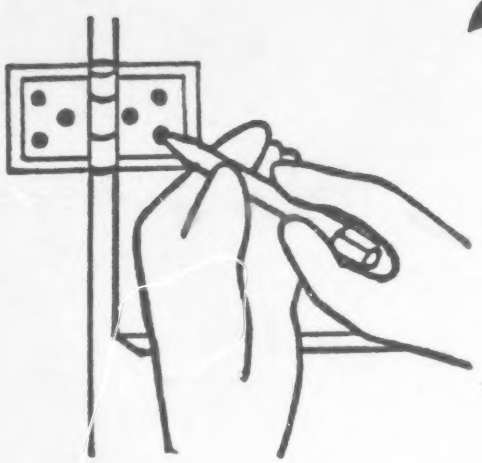


6. USE ROUTER TO TRIM ALL AROUND THE DOOR.

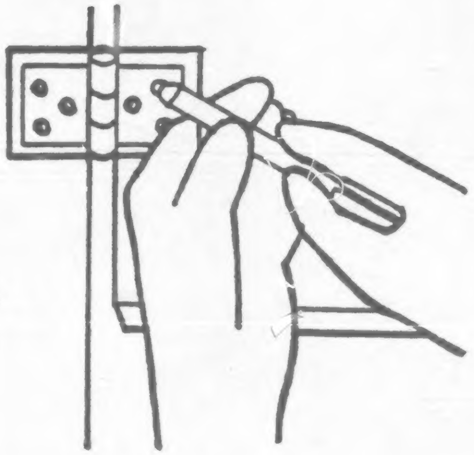
JOB STEPS

7. PUT HINGES 4 INCHES DOWN FROM TOP AND 4 INCHES UP FROM BOTTOM.

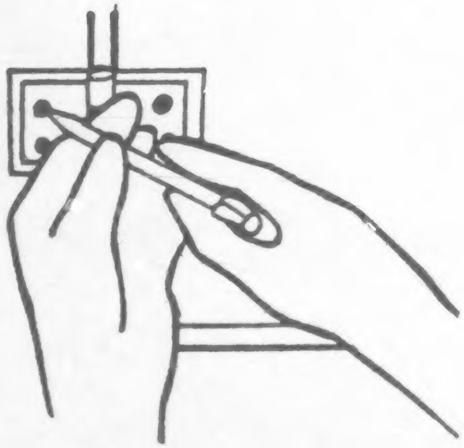




8. CENTER PUNCH SCREW HOLES IN DOOR.



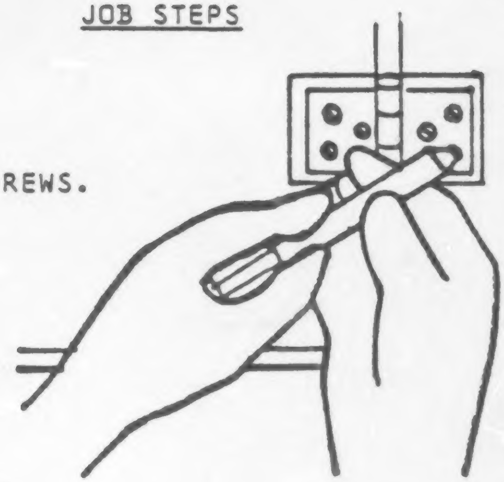
9. INSERT SCREWS.

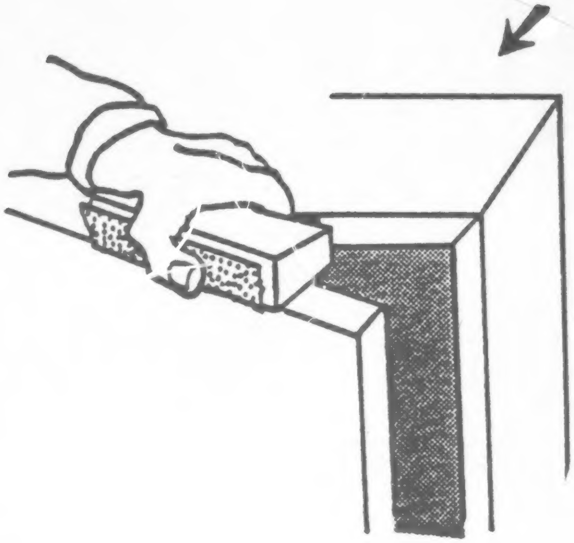


10. CENTER PUNCH HOLES IN CABINET TRIM.

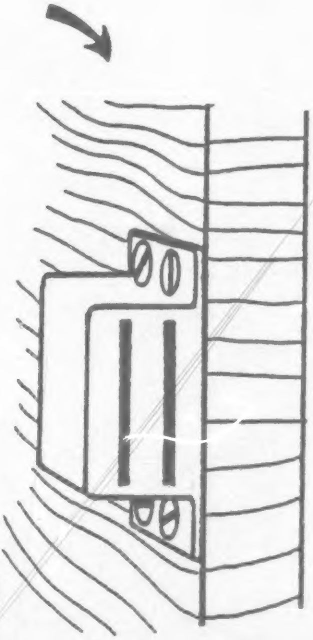
JOB STEPS

11. INSERT SCREWS.



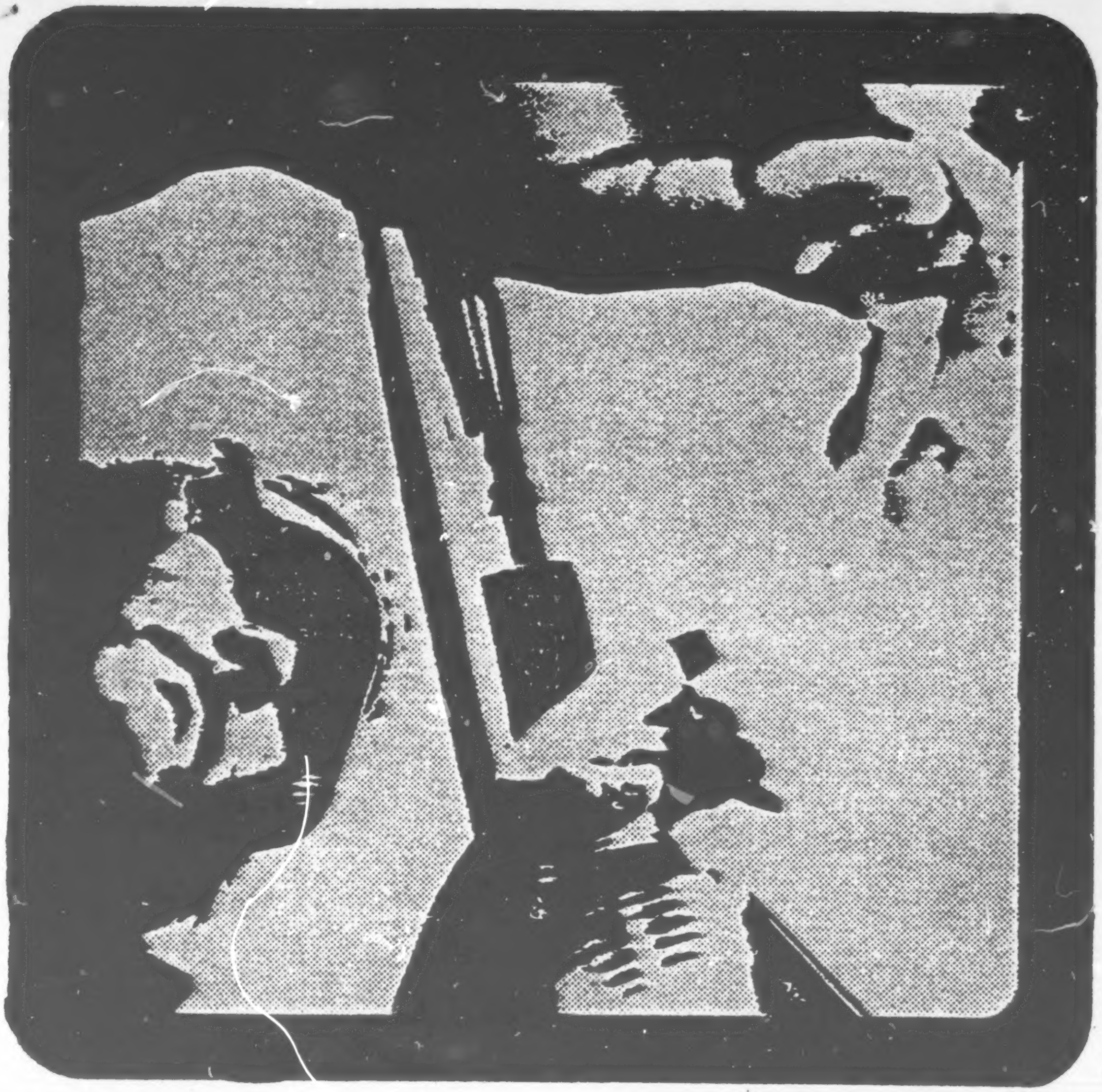


12. ADJUST TO OPEN AND CLOSE WITHOUT STICKING. (SAND TO FIT).



13. TO PUT ON MAGNETIC DOOR LATCHES, SEE YOUR INSTRUCTOR.

14. PUT AWAY ALL MATERIALS.



building maintenance & engineering

unit: CONSTRUCT CABINETS

capital area career center

module: 2201 21 005 3 date: 2/77 level: II

skill title: FABRICATE DOORS - FLUSH

developed & written by: MIKE POLEN

visuals by: GLEN COOLEY

WORD GUIDE

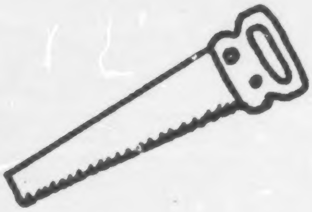
FABRICATE - MAKE AND ASSEMBLE.

PERFORMANCE OBJECTIVE

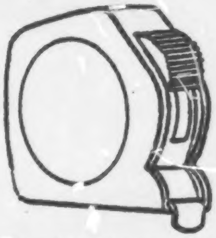
YOU ARE GOING TO LEARN:

HOW TO FABRICATE FLUSH DOORS FOR CABINETS.

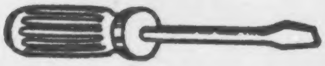
AND IN ORDER TO DO THIS YOU WILL NEED:



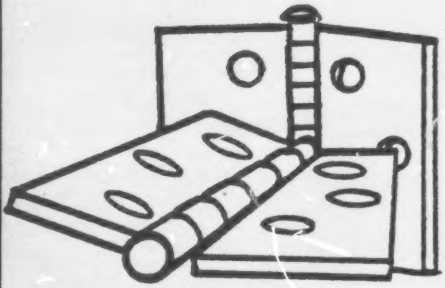
SAW



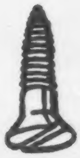
STEEL TAPE



SCREWDRIVER



HINGES

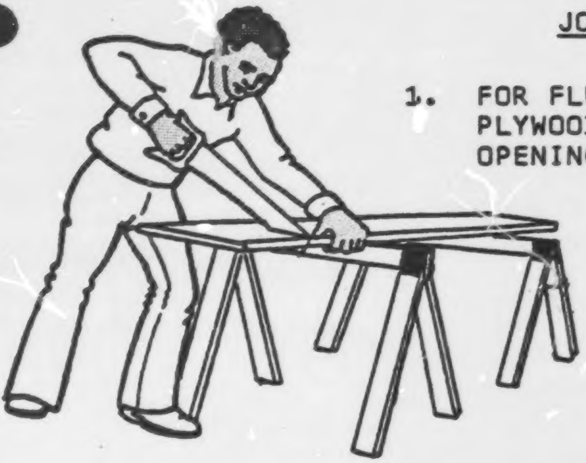


SCREWS

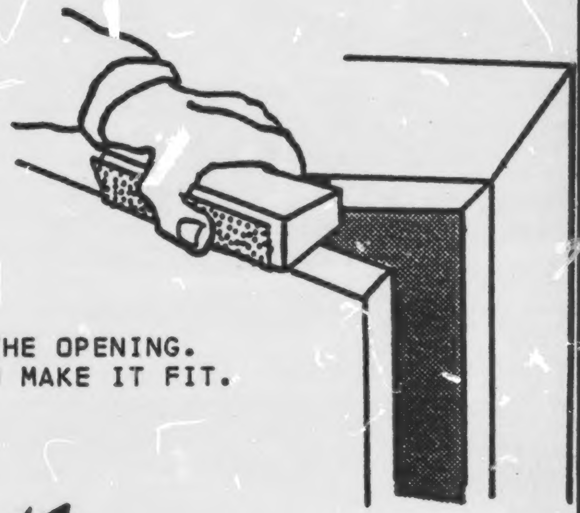
WE WILL KNOW YOU CAN DO IT WHEN:

THE DOOR YOU HAVE CUT FITS THE CABINET OPENING AND THE HINGES WORK SO THAT THE DOOR OPENS AND CLOSES WITHOUT STICKING.

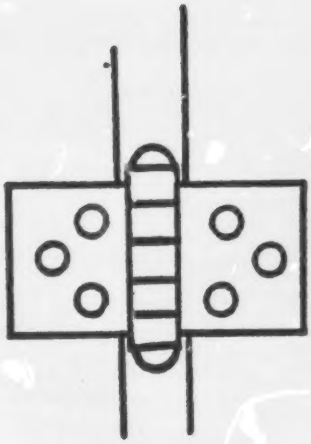
JOB STEPS



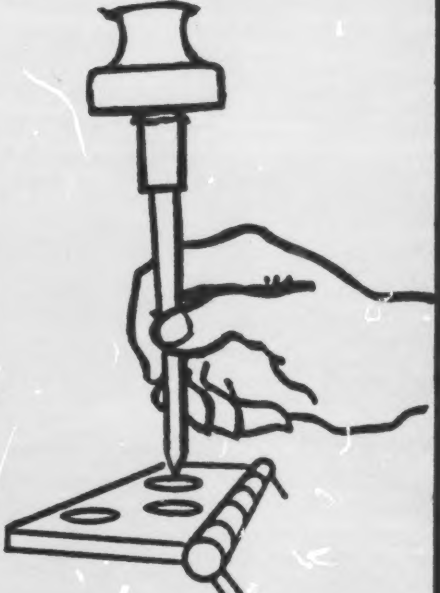
1. FOR FLUSH FITTING DOOR, CUT PLYWOOD TO THE SIZE OF THE OPENING.



2. TRY THE DOOR IN THE OPENING. SAND IF NEEDED TO MAKE IT FIT.



3. PUT HINGES ON THE DOOR SO THE HINGE PIN IS IN THE MIDDLE OF THE SLOT BETWEEN DOOR AND TRIM.



4. CENTER PUNCH SCREW HOLES. MAKE SURE HINGES ARE 4 INCHES FROM THE TOP AND BOTTOM.

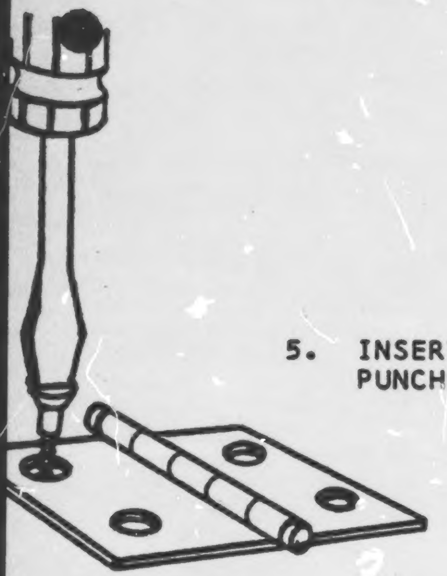
WORD GUIDE

CENTER PUNCH - MAKING A POINTED HOLE TO PUT SCREW OR DRILL BIT.

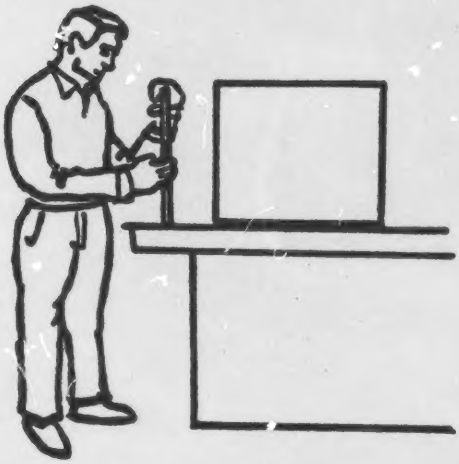
CENTER - MAKE SURE SOMETHING IS EVEN ON ALL SIDES.

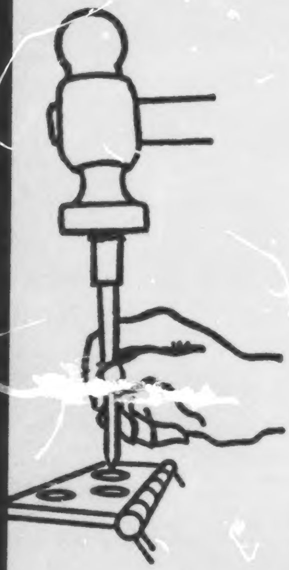
JOB STEPS

5. INSERT SCREWS IN THE CENTER PUNCHED HOLES.



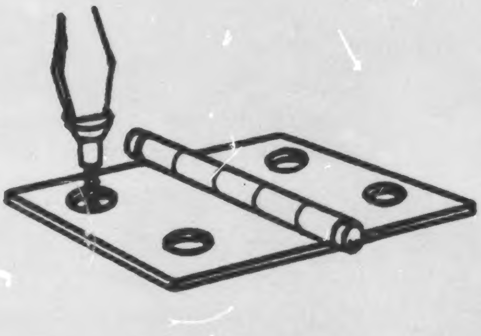
6. PLACE DOOR IN OPENING AND CENTER IT.





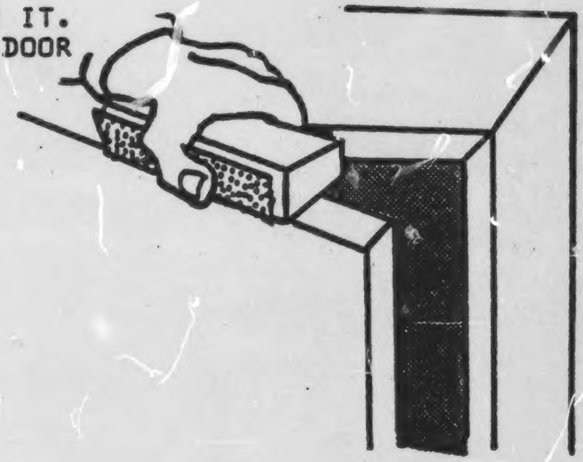
7. CENTER PUNCH SCREW HOLES IN CABINET TRIM.

8. INSERT SCREWS THROUGH HINGE ON TO CABINET TRIM.

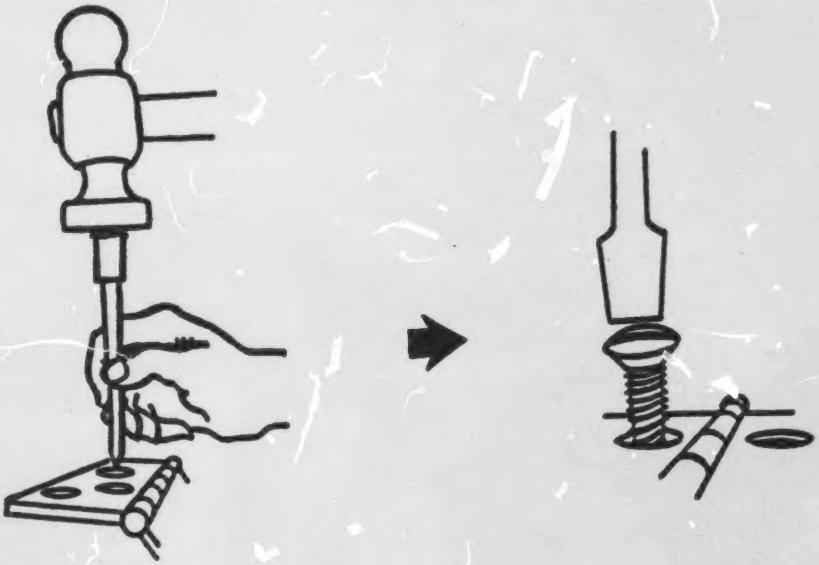


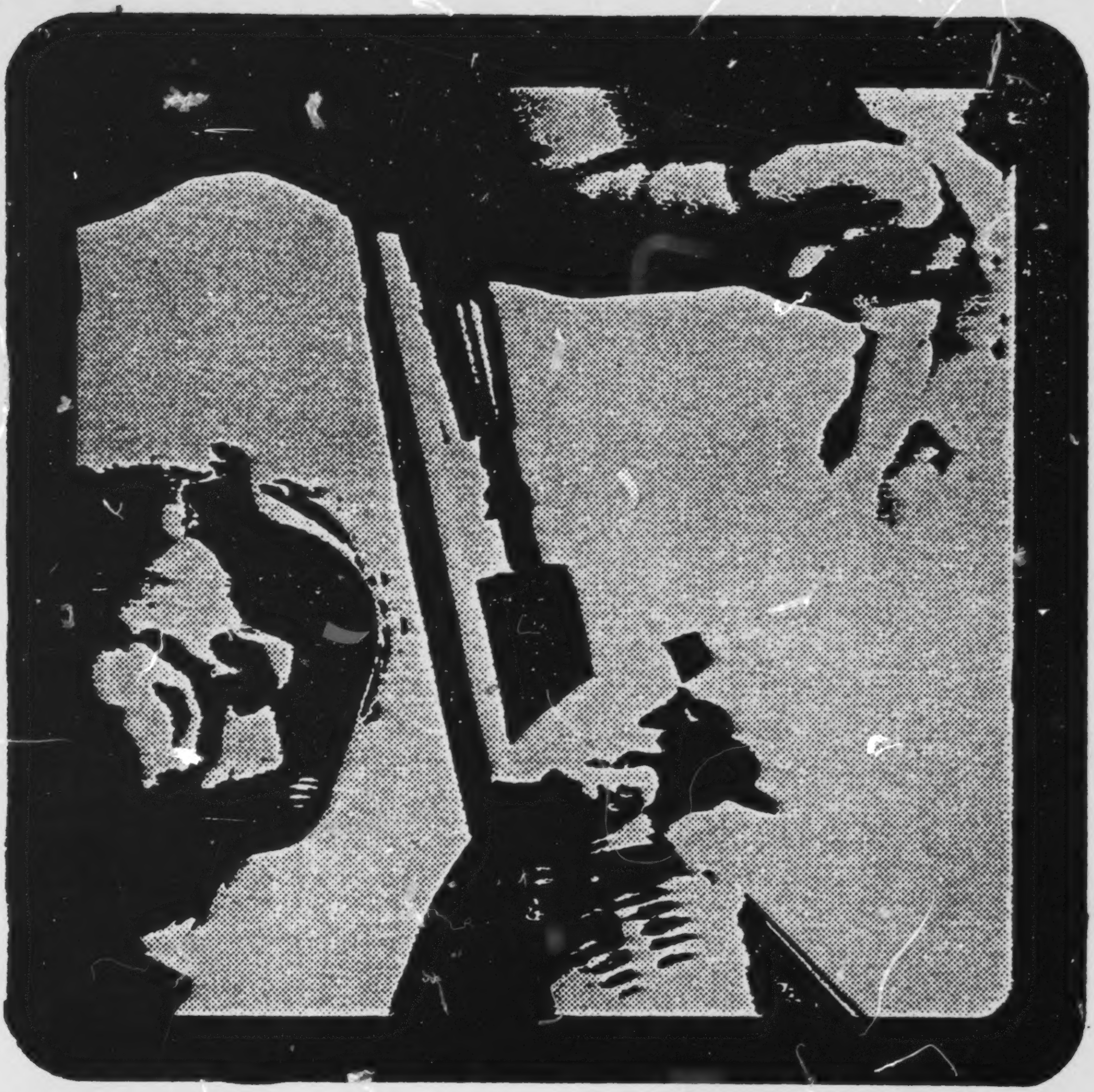
JOB STEPS

9. WHEN DOOR IS IN PLACE, CLOSE IT. SAND THE INSIDE EDGE IF THE DOOR STICKS OR WILL NOT CLOSE.



10. FOR DOUBLE DOORS, DO THE SAME JOB STEPS FOR EACH DOOR.





building maintenance & engineering

unit: CONSTRUCT CABINETS

capital area career center

module: 2201 21 006 3 date: 2/77 level: II

skill title: FABRICATE DRAWERS

developed & written by: MIKE POLEN

visuals by: MARIE GOUGEON

WORD GUIDE

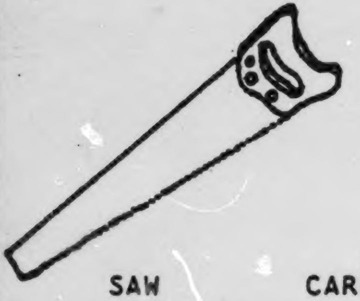
SQUARE - ALL SIDES ARE STRAIGHT AND EVEN.

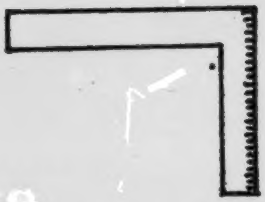
PERFORMANCE OBJECTIVE

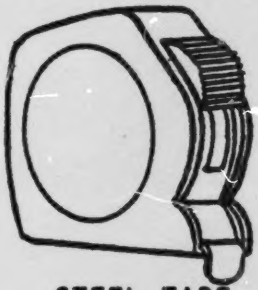
YOU ARE GOING TO LEARN:

HOW TO MAKE DRAWERS FOR A CABINET.

AND IN ORDER TO DO THIS YOU WILL NEED:


SAW


CARPENTER'S SQUARE


STEEL TAPE

PLYWOOD

GLUE

SCREWS

NAILS

SCREWDRIVER

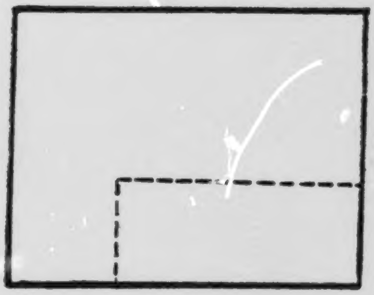
SAFETY GLASSES

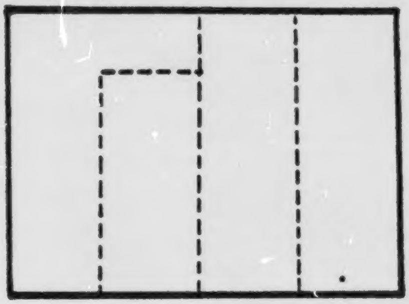
WE WILL KNOW YOU CAN DO IT WHEN:

THE DRAWER YOU HAVE MADE IS SQUARE. IT SLIDES BACK AND FORTH WITHOUT STICKING.

JOB STEPS

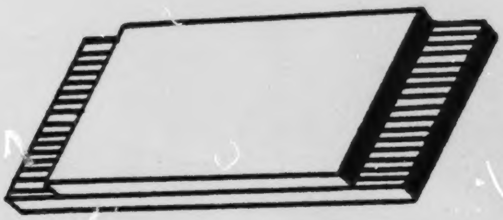
1. CUT A 3/4 INCH PIECE OF PLYWOOD 1/2 INCH WIDER AND 1/2 INCH HIGHER THAN DRAWER OPENING. THE PIECE YOU HAVE CUT IS CALLED THE FACE. BE SURE TO WEAR SAFETY GLASSES.

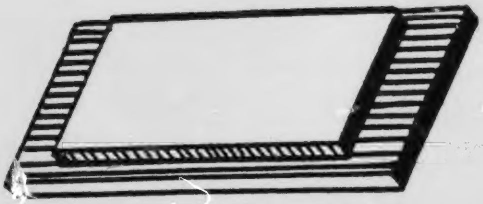




2. CUT 5/8 INCH PLYWOOD PIECES FOR THE TWO SIDES AND BACK. BE SURE TO MEASURE THE LENGTH OF THE DRAWER.

3. ROUT THE FACE 5/8 INCH WIDE AND 3/8 INCH DEEP ON BOTH SIDES.





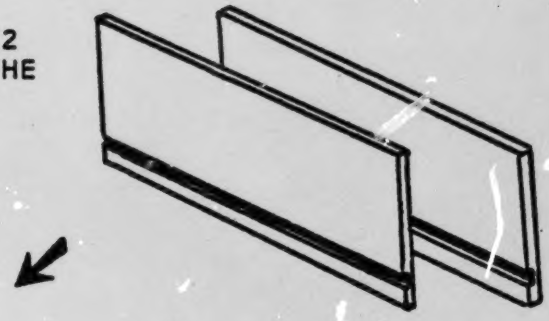
4. ROUT THE FACE 1/4 INCH ON TOP AND BOTTOM. ALSO ROUT 3/8 INCH DEEP.

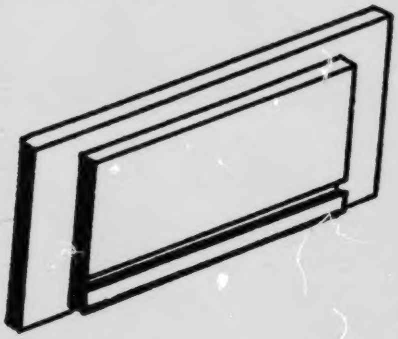
WORD GUIDE

GROOVES - A LONG, NARROW CHANNEL.

JOB STEPS

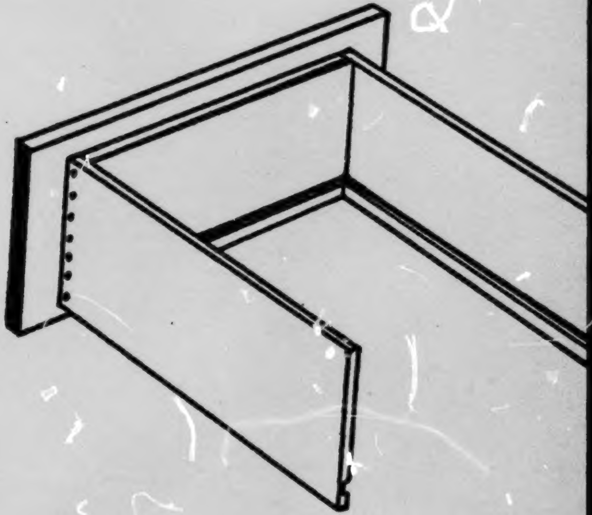
5. CUT 1/4 INCH DEEP GROOVES 1/2 INCH UP FROM THE BOTTOM OF THE SIDES AND BACK.





6. CUT 1/4 INCH DEEP GROOVE 3/4 INCH UP FROM THE BOTTOM ON THE FACE PIECE.

7. GLUE AND NAIL SIDES TO THE FACE.

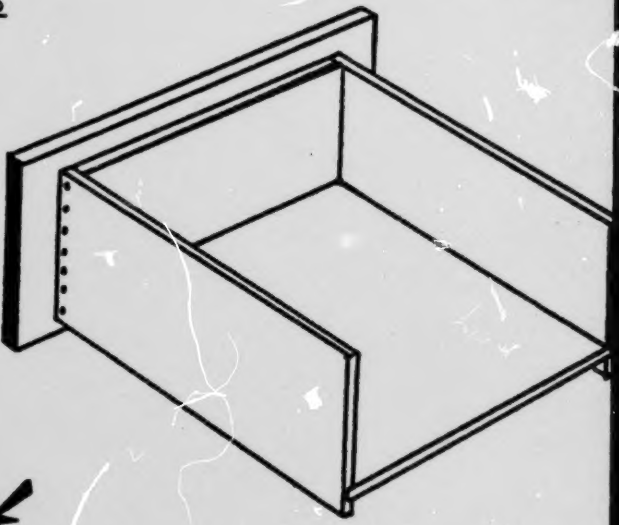


8. CUT THE DRAWER BOTTOM FROM 1/4 INCH MATERIAL TO FIT DRAWER SIZE. BE SURE TO INCLUDE THE TWO 1/4 INCH GROOVES WHEN YOU MEASURE.

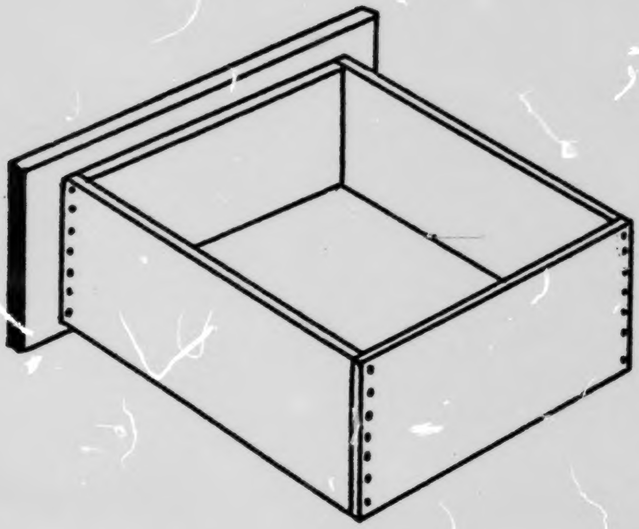
JOB STEPS

WORD GUIDE

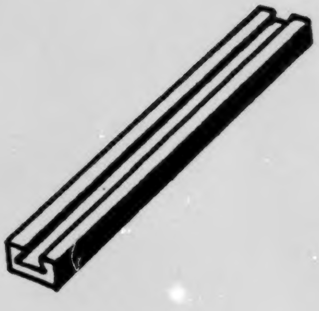
GUIDE PIECE - A LONG NARROW CHANNEL WHICH KEEPS THE DRAWER ON TRACK.



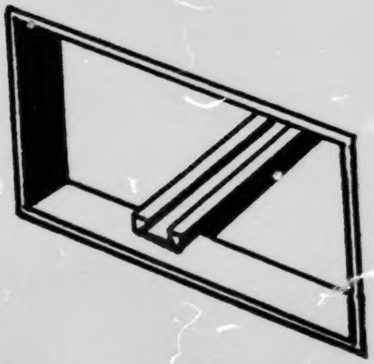
9. SLIDE DRAWER BOTTOM INTO GROOVES.



10. PUT ON THE BACK. GLUE AND NAIL INTO PLACE.



11. CUT DRAWER GUIDE PIECE. ANGLE CUT 30° AND 1/2 INCH THICK. BE SURE GUIDE LENGTH INCLUDES NOTCH IN CABINET TRIM.



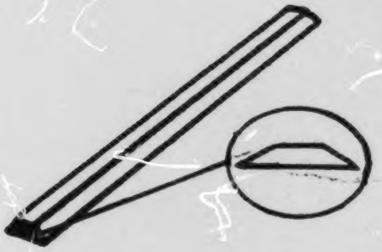
12. FIT GUIDE BETWEEN TRIM AND BACK OF CABINET. GLUE AND NAIL.

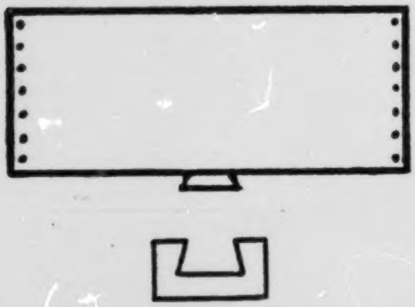
WORD GUIDE

GUIDE STRIP - PIECE ON BOTTOM OF DRAWER WHICH RIDES IN THE GUIDE PIECE.

JOB STEPS

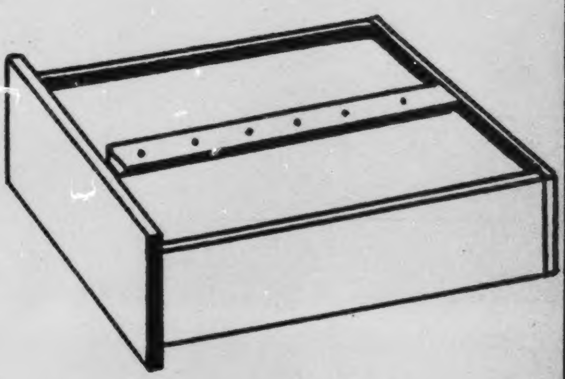
13. CUT GUIDE STRIP AT 30° ANGLE AND 1/2 INCH THICK.





14. PUT ON BOTTOM OF DRAWER. BE SURE IT LINES UP WITH THE GUIDE TRACK.

15. GLUE AND SCREW WHEN YOU KNOW THAT GUIDE STRIP BOTTOM IS LEVEL WITH TOP OF TRIM.



16. CLEAN UP YOUR WORK AREA AND PUT AWAY ALL TOOLS.

building maintenance & engineering

unit: CONSTRUCT CABINETS

capital area career center

module: 2201 21 007 3 date: 2/77 level: II

skill title: CABINET FINISHING

developed & written by: MIKE POLEN

visuals by: GLEN COOLEY

WORD GUIDE

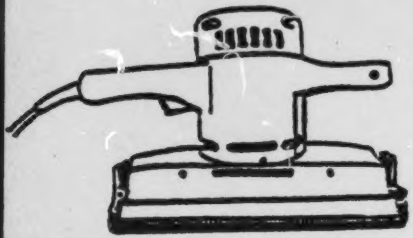
FINISH - TO SAND AND PAINT OR VARNISH.

PERFORMANCE OBJECTIVE

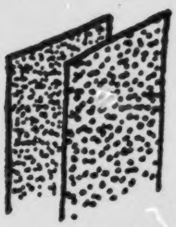
YOU ARE GOING TO LEARN:

HOW TO FINISH A CABINET.

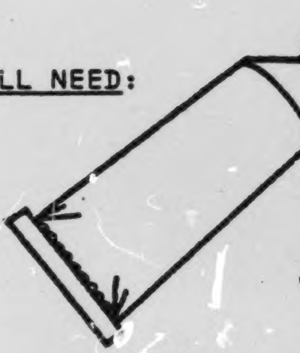
AND IN ORDER TO DO THIS YOU WILL NEED:



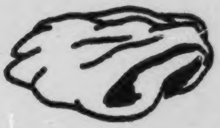
POWER SANDER



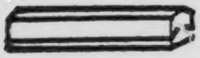
FINE & MEDIUM GRIT SANDPAPER



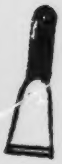
FILLER



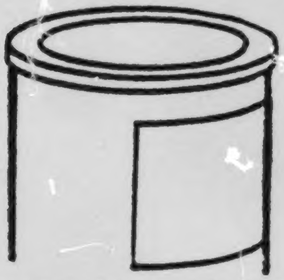
CLEAN RAG



SANDING BLOCK



PUTTY KNIFE



STAIN OR URETHANE

PAINT THINNER

SAFETY GLASSES

WE WILL KNOW YOU CAN DO IT WHEN:

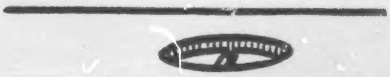
YOU HAVE FINISHED A CABINET SO THAT IT IS SMOOTH AND HAS NO MARKS OR SCRATCHES.

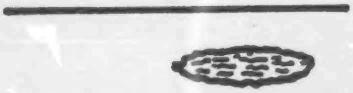
WORD GUIDE

COUNTERSINK - PUSH OR SCREW BELOW TOP EDGE.

JOB STEPS

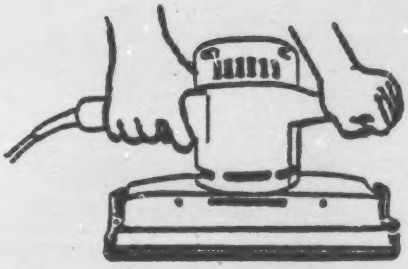
1. COUNTERSINK ALL SCREWS AND NAILS TO 1/16 INCH BELOW WOOD TOP.

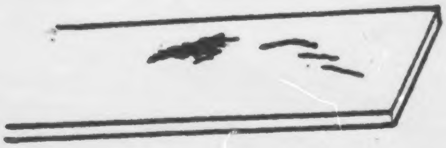




2. FILL COUNTERSINK HOLES AND DEEP SCRATCHES WITH PLASTIC WOOD FILLER. MAKE EVEN WITH TOP. LET DRY.

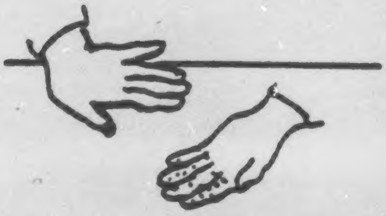
3. SAND SURFACE WITH POWER SANDER AND MEDIUM GRIT SANDPAPER. WEAR SAFETY GLASSES.





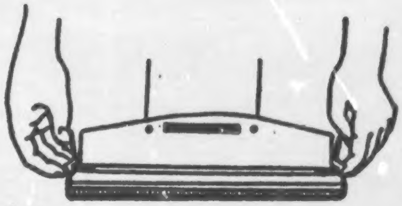
4. CHECK SURFACE FOR SCRATCHES OR ROUGH SPOTS. REPEAT STEP 3 IF NEEDED.

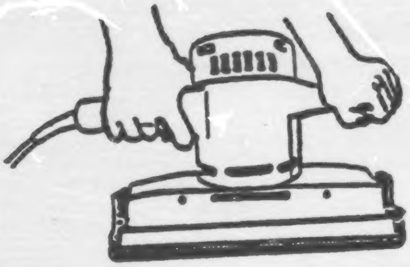
5. BRUSH OFF ALL SANDING DUST.



JOB STEPS

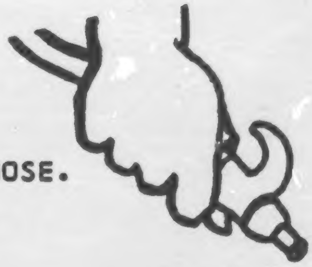
6. PUT FINE GRIT SANDPAPER ON POWER SANDER.

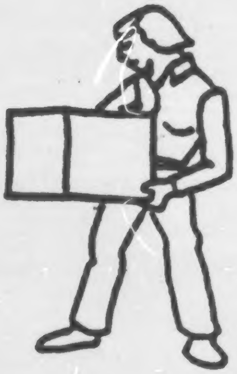




7. SAND ALL OF CABINET AGAIN.

8. BLOW OFF DUST WITH THE AIR HOSE.





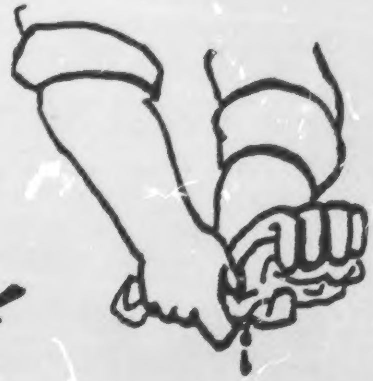
9. MOVE CABINET TO THE PAINT AREA.

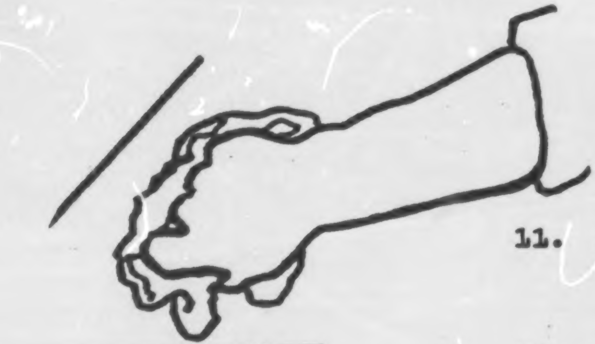
WORD GUIDE

EXCESS - MORE THAN NEEDED.

JOB STEPS

10. PUT PAINT THINNER ON A CLEAN RAG. WRING OUT THE EXCESS.

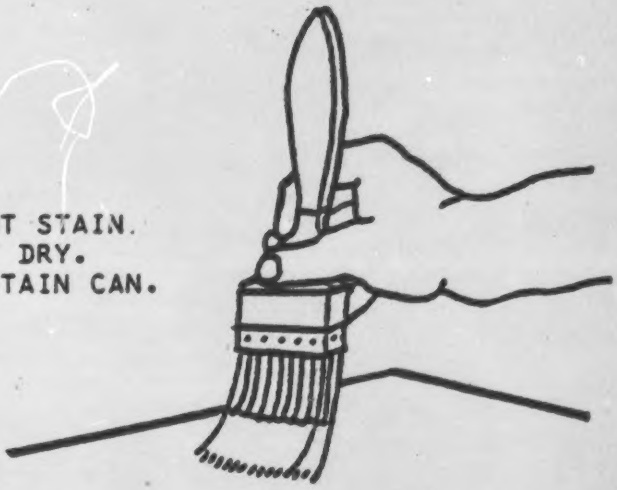


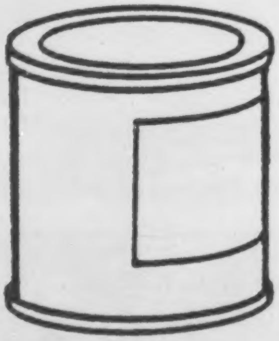


11. WIPE CABINET SURFACE WITH THE RAG TO GET DUST OFF.

12. FOR A NATURAL FINISH (NO STAIN), GO TO JOB STEP 14.

13. FOR A STAINED FINISH, PUT STAIN ON WHOLE SURFACE AND LET DRY. READ DIRECTIONS ON THE STAIN CAN.

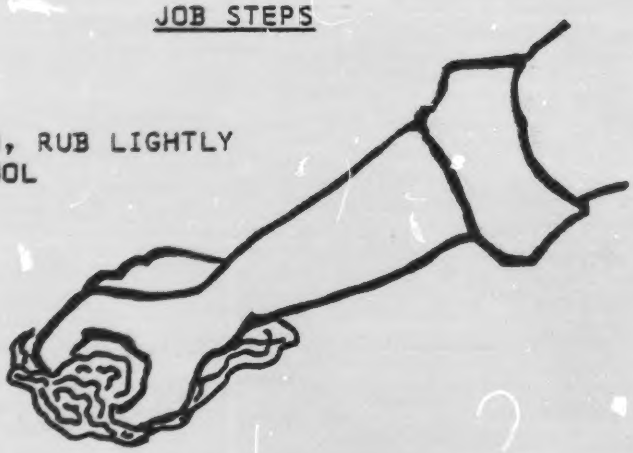


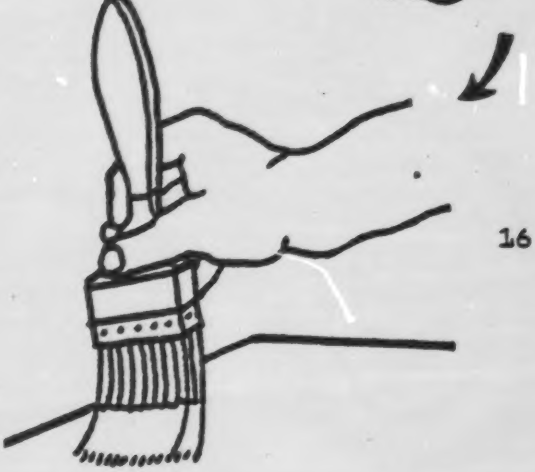


14. PUT ON FIRST COAT OF URETHANE AND LET DRY. READ DIRECTIONS ON URETHANE CAN.

JOB STEPS

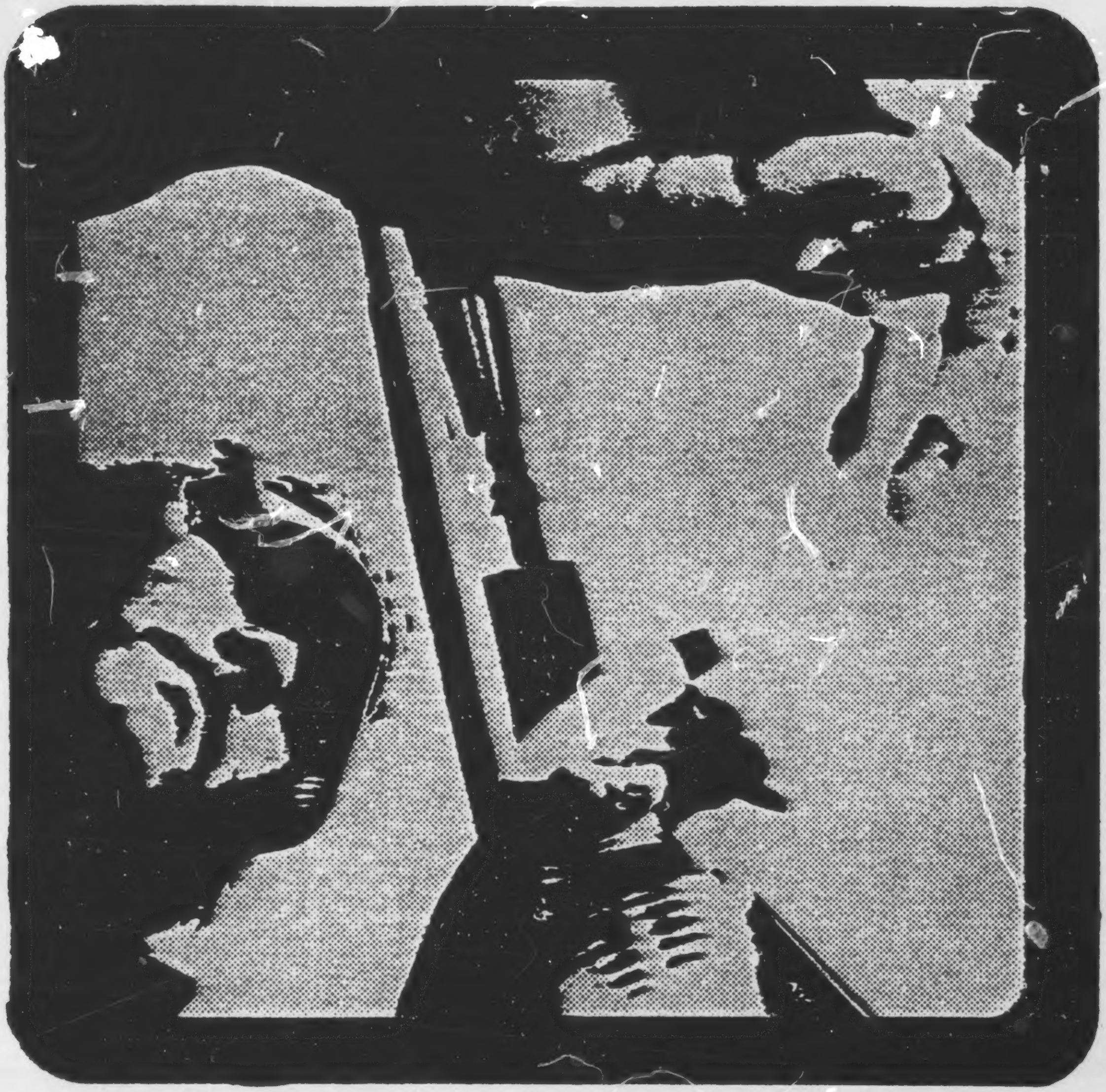
15. IF FINISH IS ROUGH, RUB LIGHTLY WITH FINE STEEL WOOL





16. PUT ON ANOTHER COAT OF URETHANE.

17. CLEAN AND PUT AWAY ALL EQUIPMENT.



building maintenance & engineering

unit: REPAIR DAMAGED FURNITURE

capital area career center

module: 2201 22 001 3 **date:** 2/77 **level:** II

skill title: REPAIR STRIPPED SCREW HOLES

developed & written by: ROY HASKE

visuals by: CHUCK KNOCK

WORD GUIDE

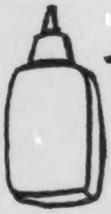
UNDER-SIZED DRILL BIT - SMALLER BIT THAN THE SCREW YOU WILL USE.

PERFORMANCE OBJECTIVE

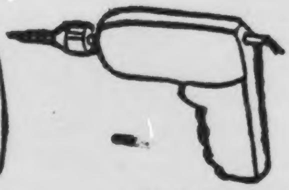
YOU ARE GOING TO LEARN:

HOW TO REPAIR ENLARGED (STRIPPED) SCREW HOLES.

AND IN ORDER TO DO THIS YOU WILL NEED:

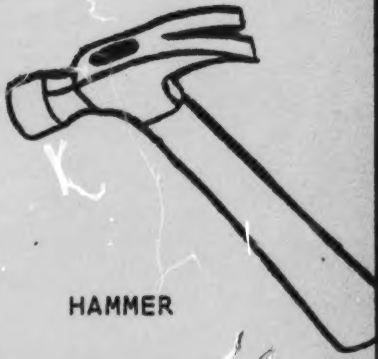


GLUE



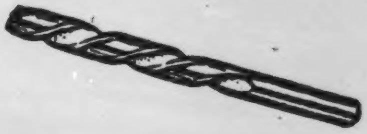
DRILL

PIECES OF SOFT WOOD



HAMMER

SAFETY GLASSES



UNDER-SIZED DRILL BIT

WE WILL KNOW YOU CAN DO IT WHEN:

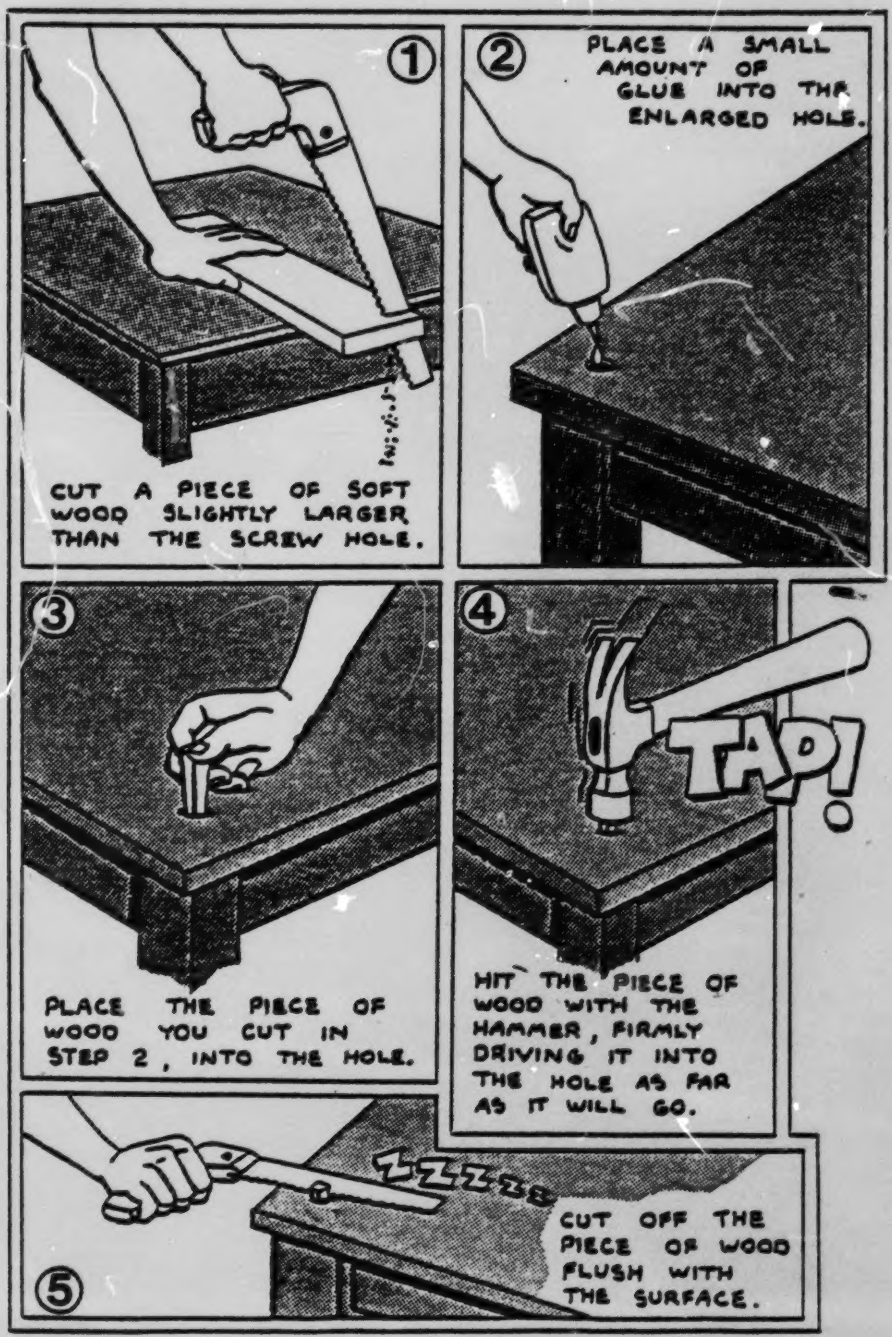
YOU HAVE TIGHTLY PLUGGED THE HOLE, DRILLED A NEW HOLE IN THE SAME PLACE AND TIGHTENED THE SCREW INTO THE HOLE.

JOB STEPS

WORD GUIDE

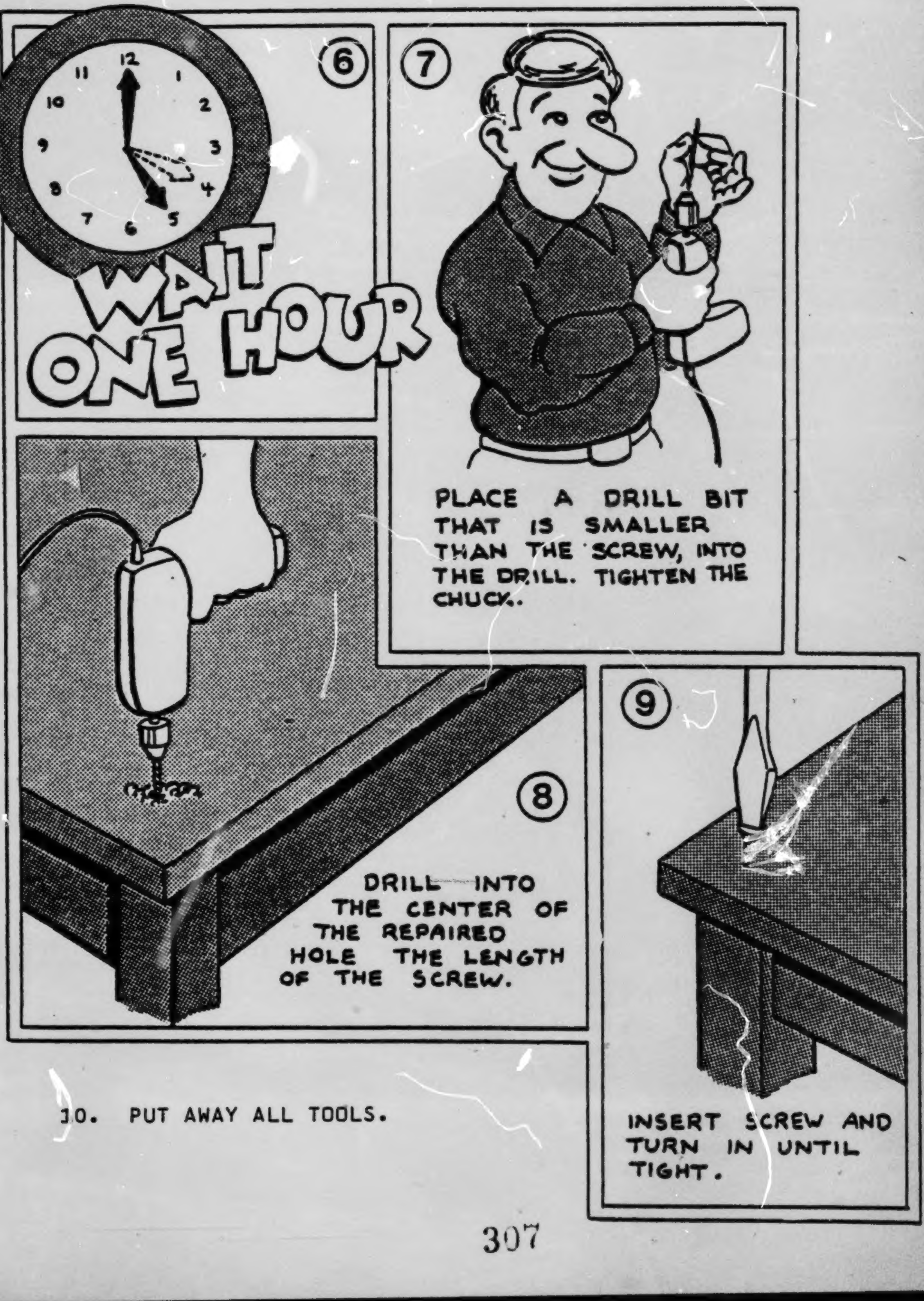
FLUSH - EVEN WITH.

WEAR SAFETY GLASSES.



1. CUT A PIECE OF SOFT WOOD SLIGHTLY LARGER THAN THE SCREW HOLE.
2. PLACE A SMALL AMOUNT OF GLUE INTO THE ENLARGED HOLE.
3. PLACE THE PIECE OF WOOD YOU CUT IN STEP 2, INTO THE HOLE.
4. HIT THE PIECE OF WOOD WITH THE HAMMER, FIRMLY DRIVING IT INTO THE HOLE AS FAR AS IT WILL GO.
5. CUT OFF THE PIECE OF WOOD FLUSH WITH THE SURFACE.

JOB STEPS


6
WAIT ONE HOUR
7
PLACE A DRILL BIT THAT IS SMALLER THAN THE SCREW, INTO THE DRILL. TIGHTEN THE CHUCK.
8
DRILL INTO THE CENTER OF THE REPAIRED HOLE THE LENGTH OF THE SCREW.
9
INSERT SCREW AND TURN IN UNTIL TIGHT.

10. PUT AWAY ALL TOOLS.

building maintenance & engineering

unit: REPAIR DAMAGED FURNITURE

capital area career center

module: 2201 22 002 3 date: 2/77 level: II

skill title: REPAIR WOOD CRACKS

developed & written by: ROY HASKE

visuals by: CHUCK KNOCK

WORD GUIDE

WHITE GLUE - A GLUE THAT DRIES CLEAR.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO REPAIR FURNITURE THAT IS CRACKED.

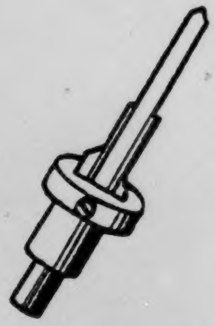
AND IN ORDER TO DO THIS YOU WILL NEED:

SAFETY GLASSES

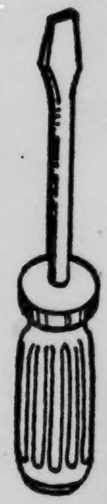
WHITE GLUE

SCREWS

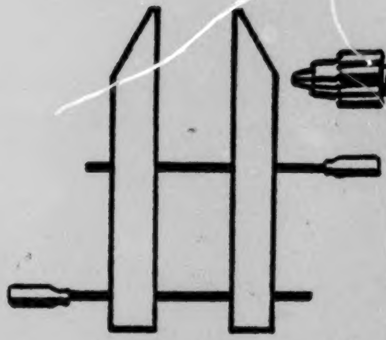
PLASTIC WOOD



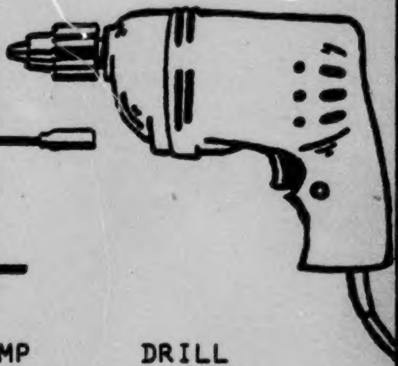
SCREWMATE



SCREWDRIVER



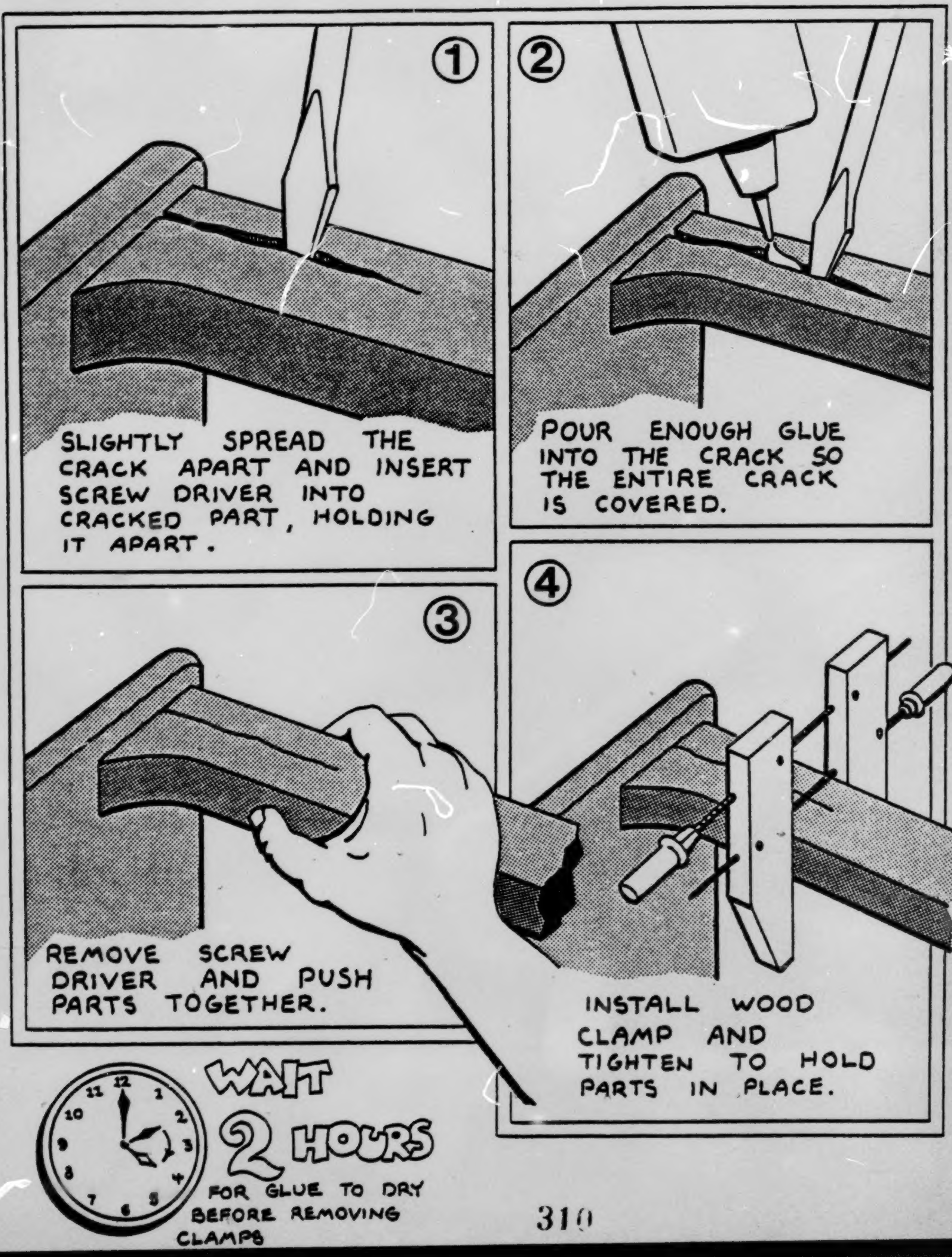
WOOD CLAMP



DRILL

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE GLUED THE CRACK, SCREWED THE CRACK CLOSED, AND FILLED SCREW HOLES WITH PLASTIC WOOD SO THAT THE REPAIRED AREA IS AS STRONG AS BEFORE THE WOOD CRACK.



① SLIGHTLY SPREAD THE CRACK APART AND INSERT SCREW DRIVER INTO CRACKED PART, HOLDING IT APART.

② POUR ENOUGH GLUE INTO THE CRACK SO THE ENTIRE CRACK IS COVERED.

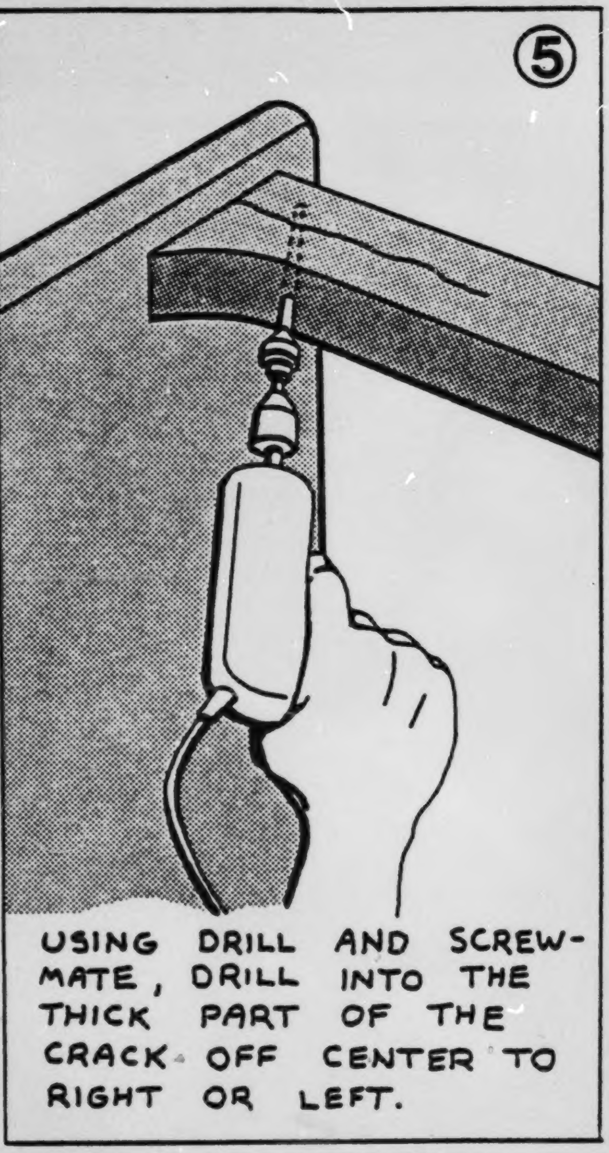
③ REMOVE SCREW DRIVER AND PUSH PARTS TOGETHER.

④ INSTALL WOOD CLAMP AND TIGHTEN TO HOLD PARTS IN PLACE.

WAIT 2 HOURS FOR GLUE TO DRY BEFORE REMOVING CLAMPS

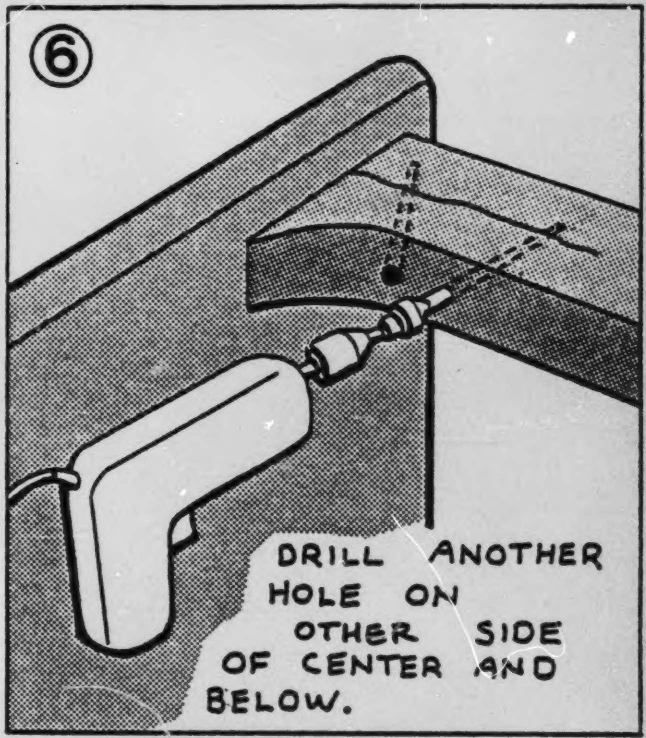
WEAR SAFETY GLASSES.

⑤



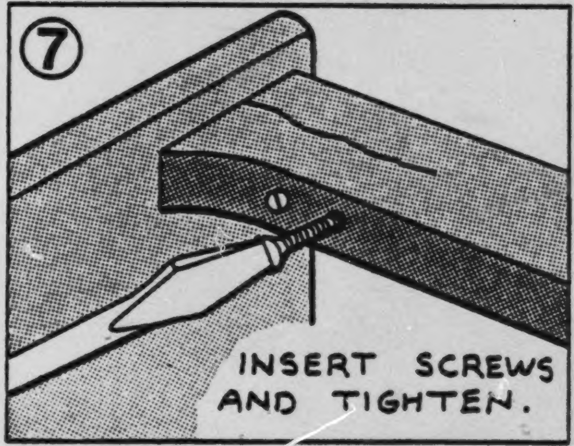
USING DRILL AND SCREW-MATE, DRILL INTO THE THICK PART OF THE CRACK OFF CENTER TO RIGHT OR LEFT.

⑥



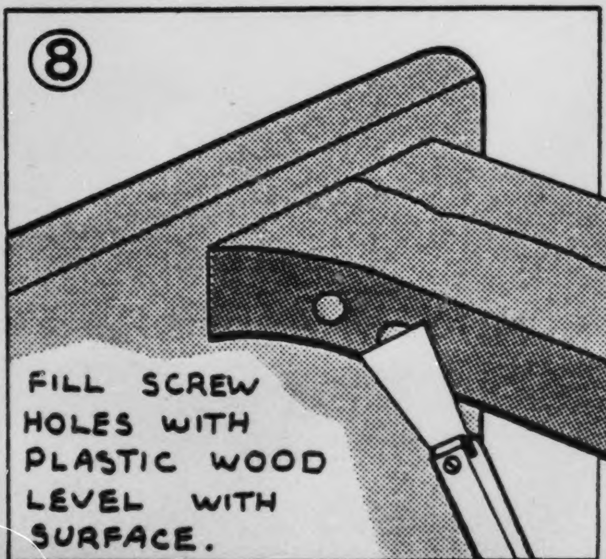
DRILL ANOTHER HOLE ON OTHER SIDE OF CENTER AND BELOW.

⑦



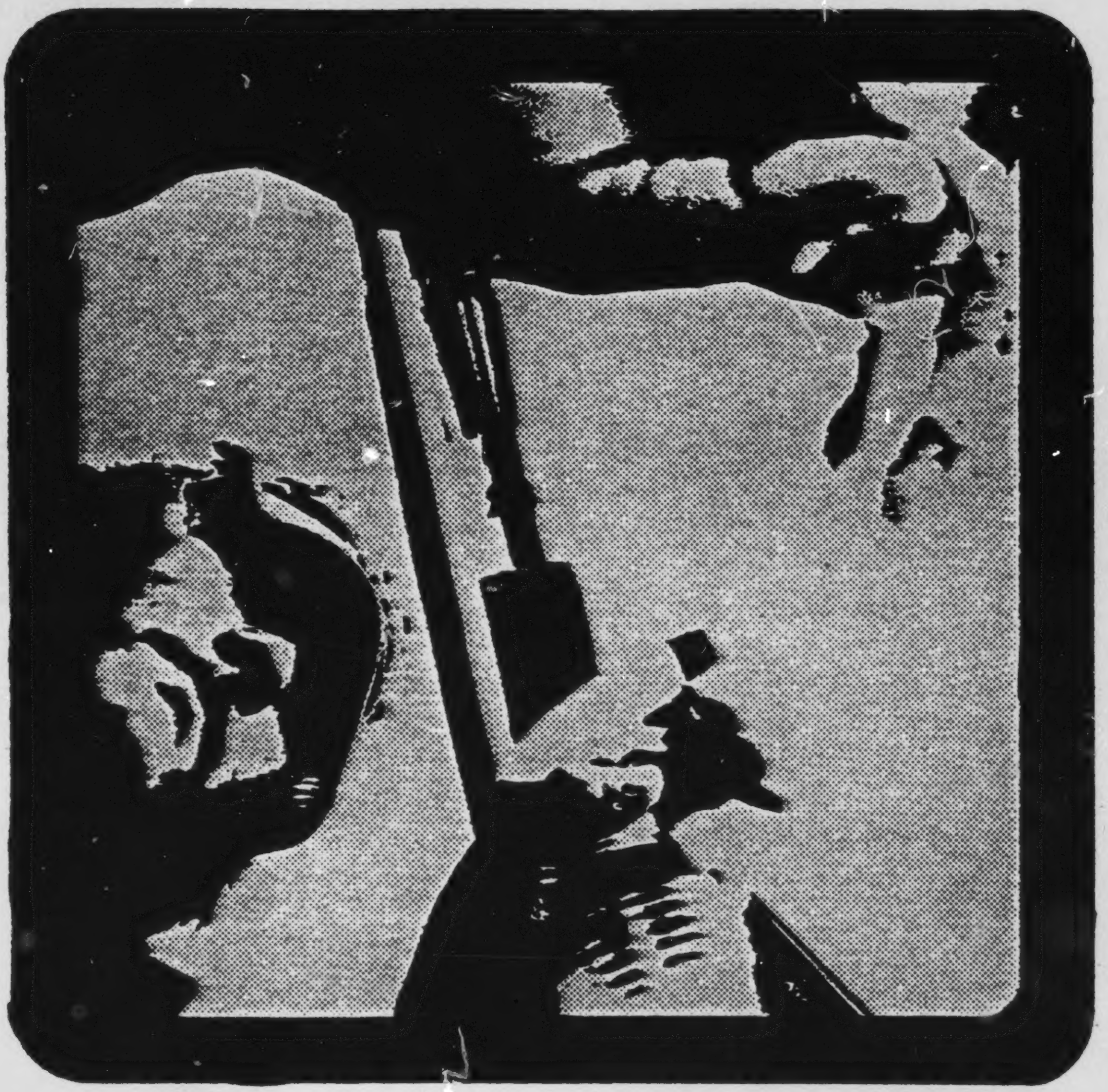
INSERT SCREWS AND TIGHTEN.

⑧



FILL SCREW HOLES WITH PLASTIC WOOD LEVEL WITH SURFACE.

9. PUT AWAY ALL TOOLS.



building maintenance & engineering

unit: REPAIR DAMAGED FURNITURE

capital area career center

module: 2201 22 003 3 date: 5/77 level:

skill title: FASTEN WOOD WITH DOWEL-PINS

developed & written by: DEBORAH J. WHITE

visuals by: SANDRA STARNAMAN

WORD GUIDE

WHITE GLUE - GLUE THAT DRIES CLEAR SO YOU CANNOT SEE IT.

DOWEL-PINS - ROUND WOODEN PIECES.

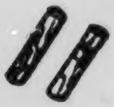
"C" CLAMP - A CLAMP SHAPED LIKE THE LETTER "C".

PERFORMANCE OBJECTIVE

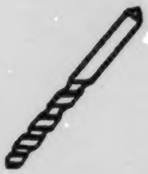
WHAT YOU ARE GOING TO LEARN:

HOW TO FASTEN WOOD TOGETHER WITH DOWEL-PINS.

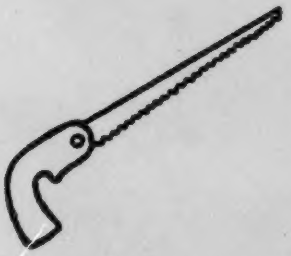
AND IN ORDER TO DO THIS YOU WILL NEED:



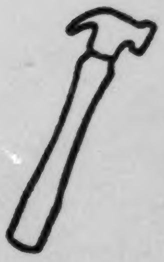
DOWEL-PIN STOCK



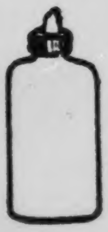
DRILL BIT



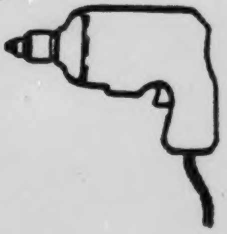
FINE-TOOTH SAW



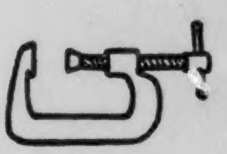
HAMMER



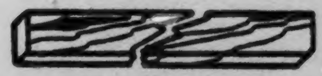
WHITE GLUE



ELECTRIC DRILL



METAL "C" CLAMP



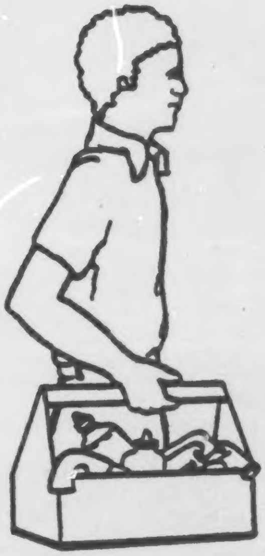
BROKEN WOOD PIECES (MUST FIT TOGETHER)

WE WILL KNOW YOU CAN DO IT WHEN:

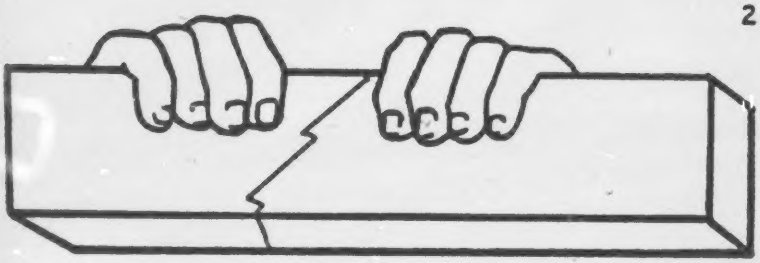
YOU HAVE GLUED AND FITTED PINS INTO 2 PIECES OF WOOD SO THEY WILL NOT COME APART.

JOB STEPS

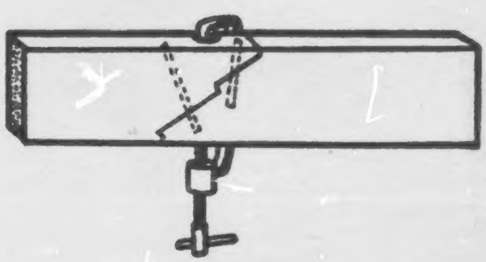
1. GET ALL EQUIPMENT YOU WILL NEED AND TAKE IT TO YOUR WORK AREA.



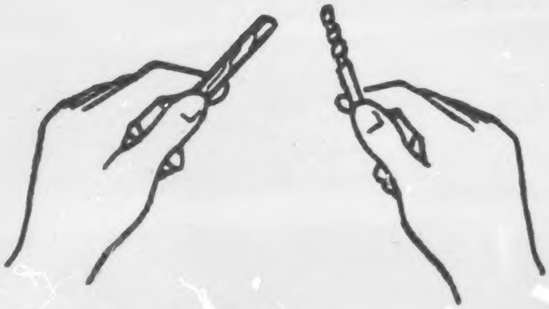
2. GLUE THE TWO BROKEN PIECES OF WOOD SO THEY FIT TOGETHER THE WAY THEY WERE BEFROE THEY WERE BROKEN.



3. QUICKLY PUT THE METAL "C" CLAMP ON THE 2 PIECES OF WOOD. SET THE CLAMP BETWEEN THE 2 PLACES YOU WILL SET DOWEL PINS.

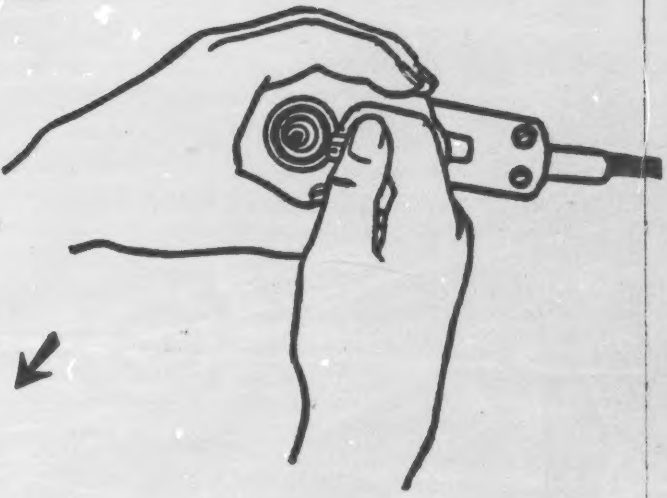


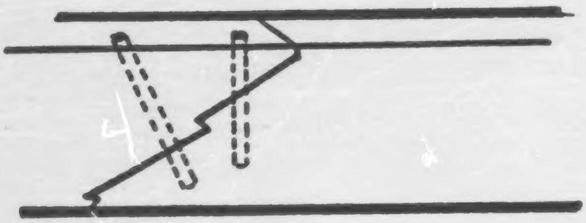
4. MATCH DRILL BIT WITH DOWEL-PIN SIZE.



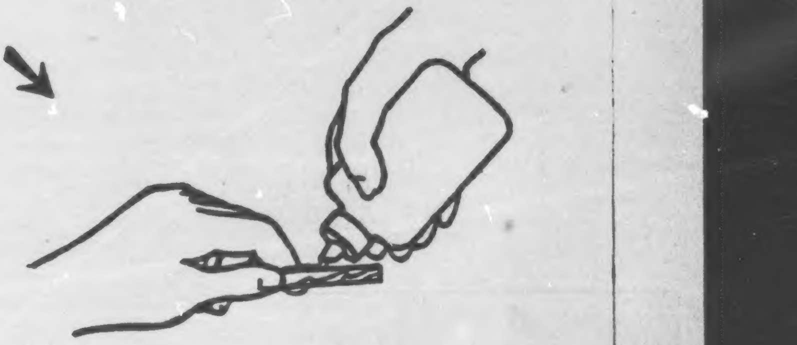
JOB STEPS

5. PUT DRILL BIT INTO DRILL CHUCK AND TIGHTEN WITH CHUCK KEY. (IF YOU NEED TO, READ MODULE 2201 20 002 3, HOW TO OPERATE AN ELECTRIC DRILL.)

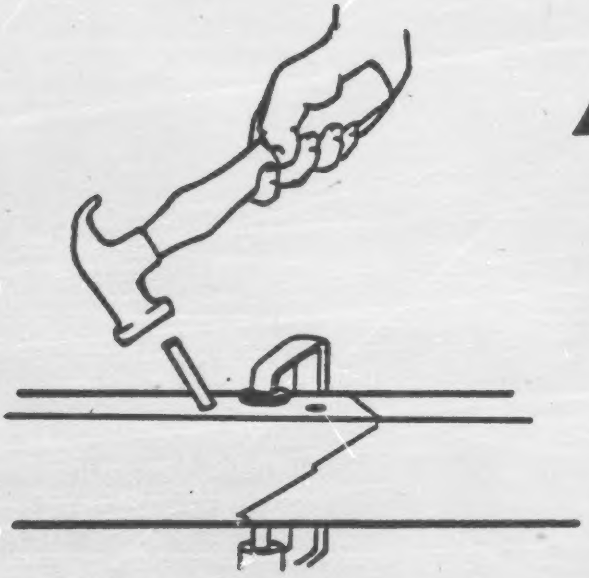




6. DRILL 2 HOLES, AT OPPOSITE ANGLES.



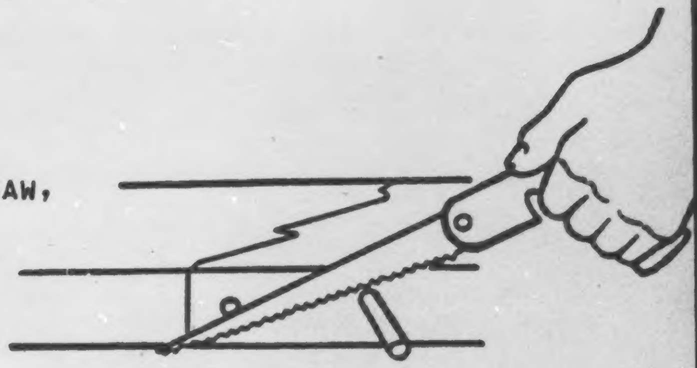
7. PUT WHITE GLUE ON PINS. WIPE OFF EXTRA GLUE.

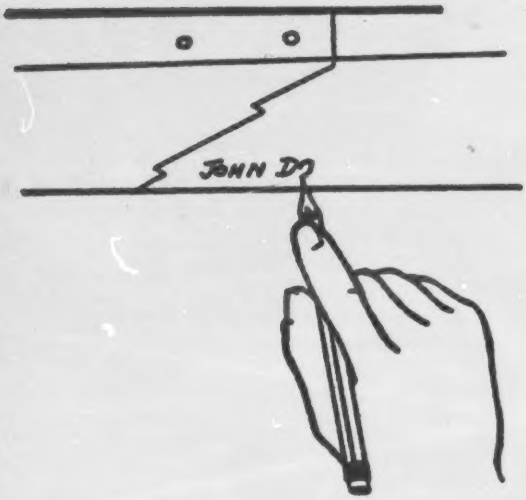


8. HAMMER PINS INTO DRILLED HOLES.

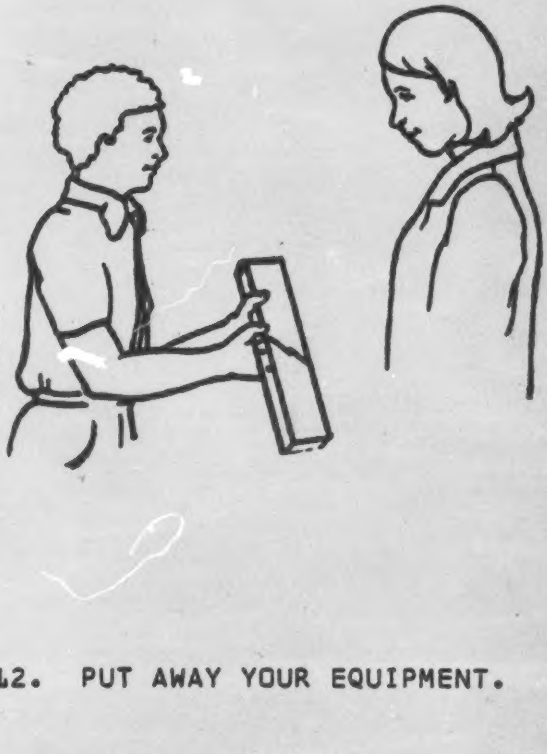
JOB STEPS

9. USING FINE-TOOTH SAW OR HACK SAW, SAW OFF PINS EVEN WITH WOOD.

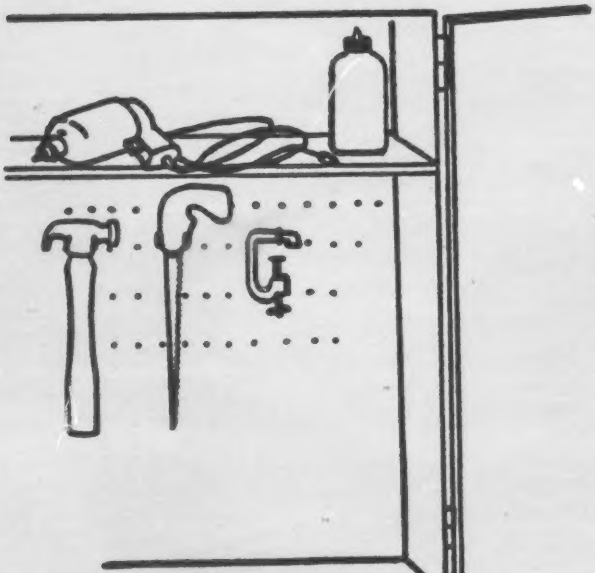




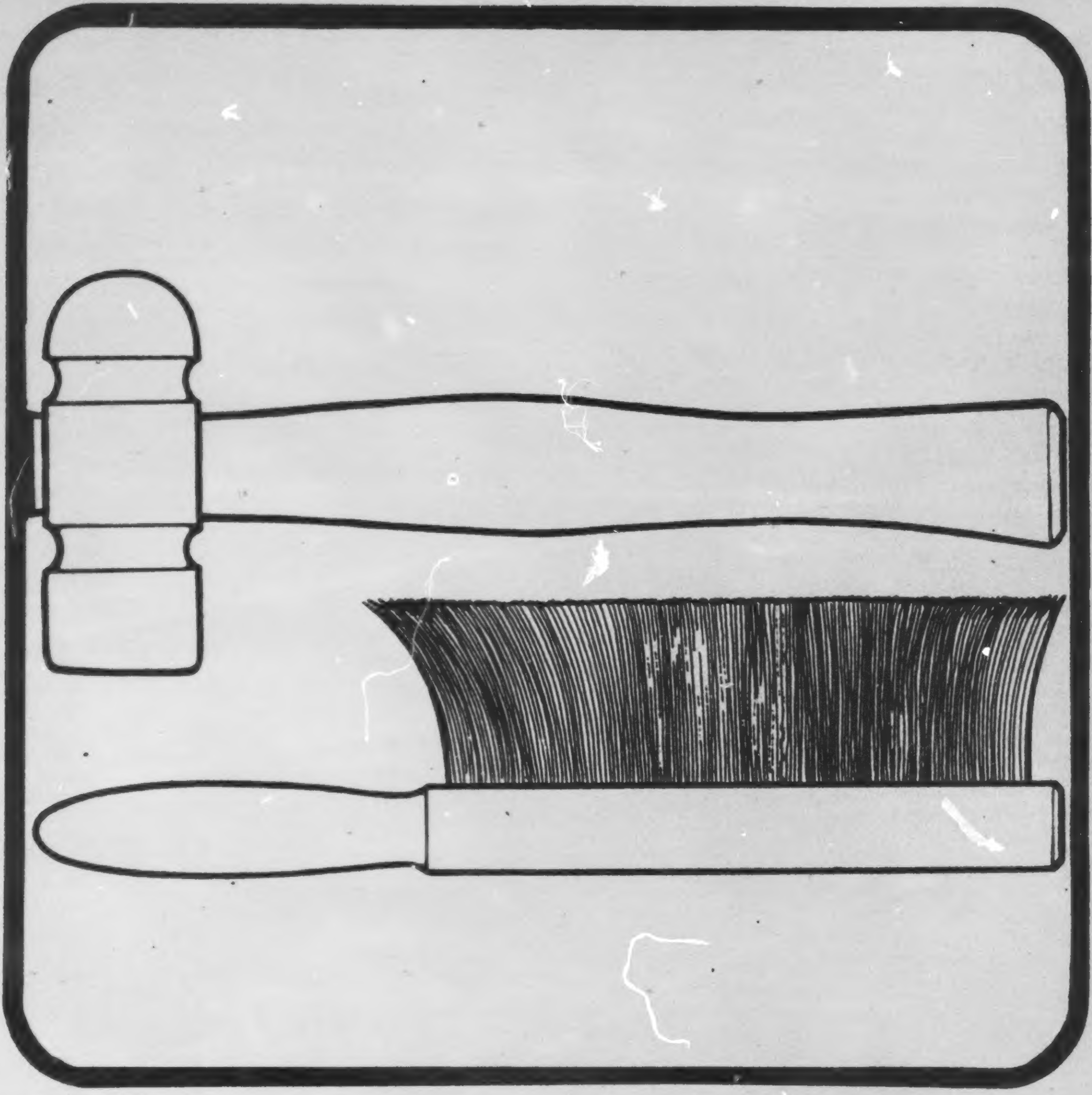
10. LET DRY FOR ONE DAY - (24 HOURS) PUT YOUR NAME ON YOUR WORK.



11. SHOW YOUR WORK TO YOUR INSTRUCTOR.



12. PUT AWAY YOUR EQUIPMENT.



building maintenance & engineering

unit: WINDOWS

capital area career center

module: 2201 23 001 3 date: AUGUST 1977 level: I

skill title: VISUAL INSPECTION - WINDOWS

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

WORD GUIDE

INSPECTION - EXAMINATION; LOOKING CAREFULLY AT A TASK OR AN ITEM.

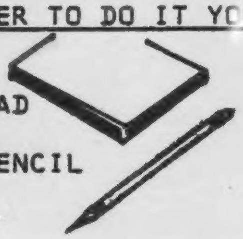
VISUAL - WITH EYES.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO DO A VISUAL INSPECTION OF WINDOWS.

IN ORDER TO DO IT YOU WILL NEED:



A PAD

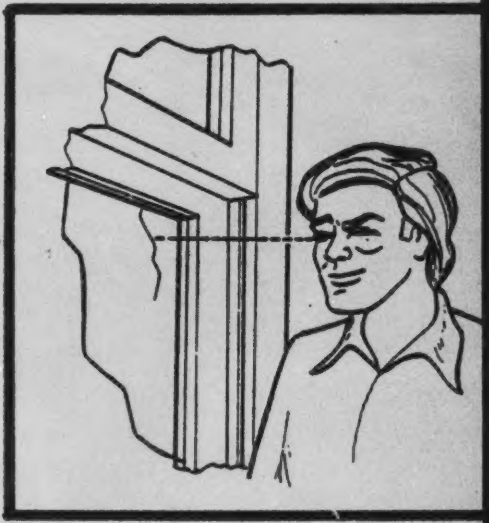
A PENCIL

WE WILL KNOW YOU CAN DO IT WHEN:

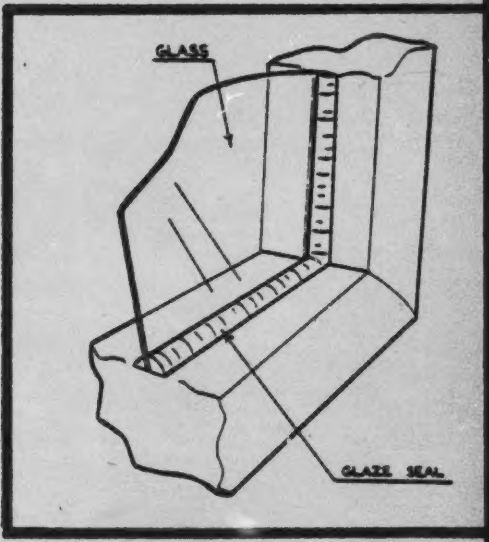
YOU HAVE NOTED IF THERE ARE ANY CHIPPED OR CRACKED FRAMES OR SEALS, AND WHETHER THE WINDOWS WORK EASY.

JOB STEPS

1. INSPECT WINDOWS FOR CRACKS IN THE GLASS BY LOOKING AT THE GLASS FROM AN ANGLE.

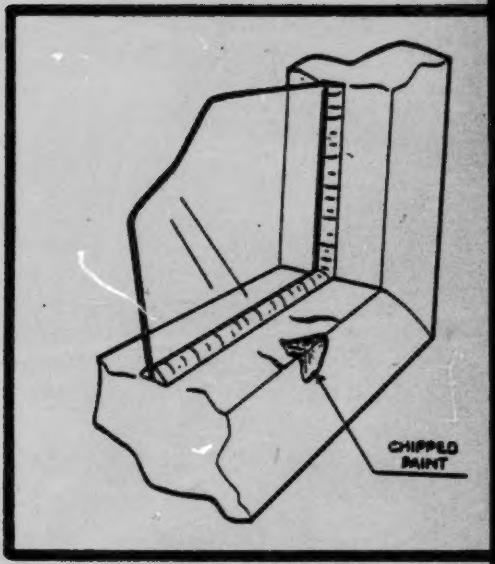


2. INSPECT THE GLAZE SEAL AROUND THE GLASS FOR CHIPPING OR CRACKING.

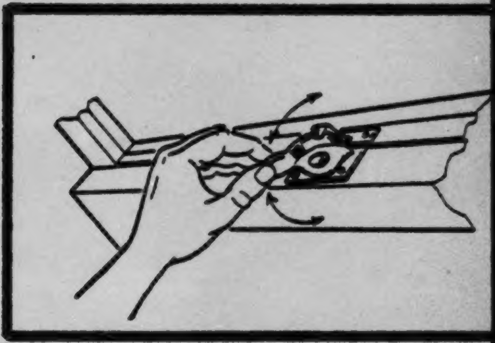


JOB STEPS

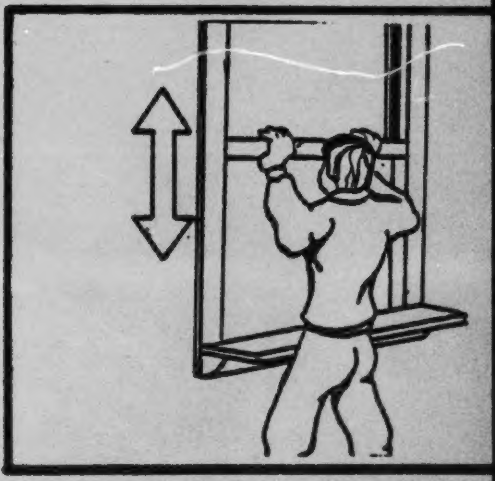
3. INSPECT PAINT - LOOK FOR CRACKING AND PEELING (WOOD WINDOWS).

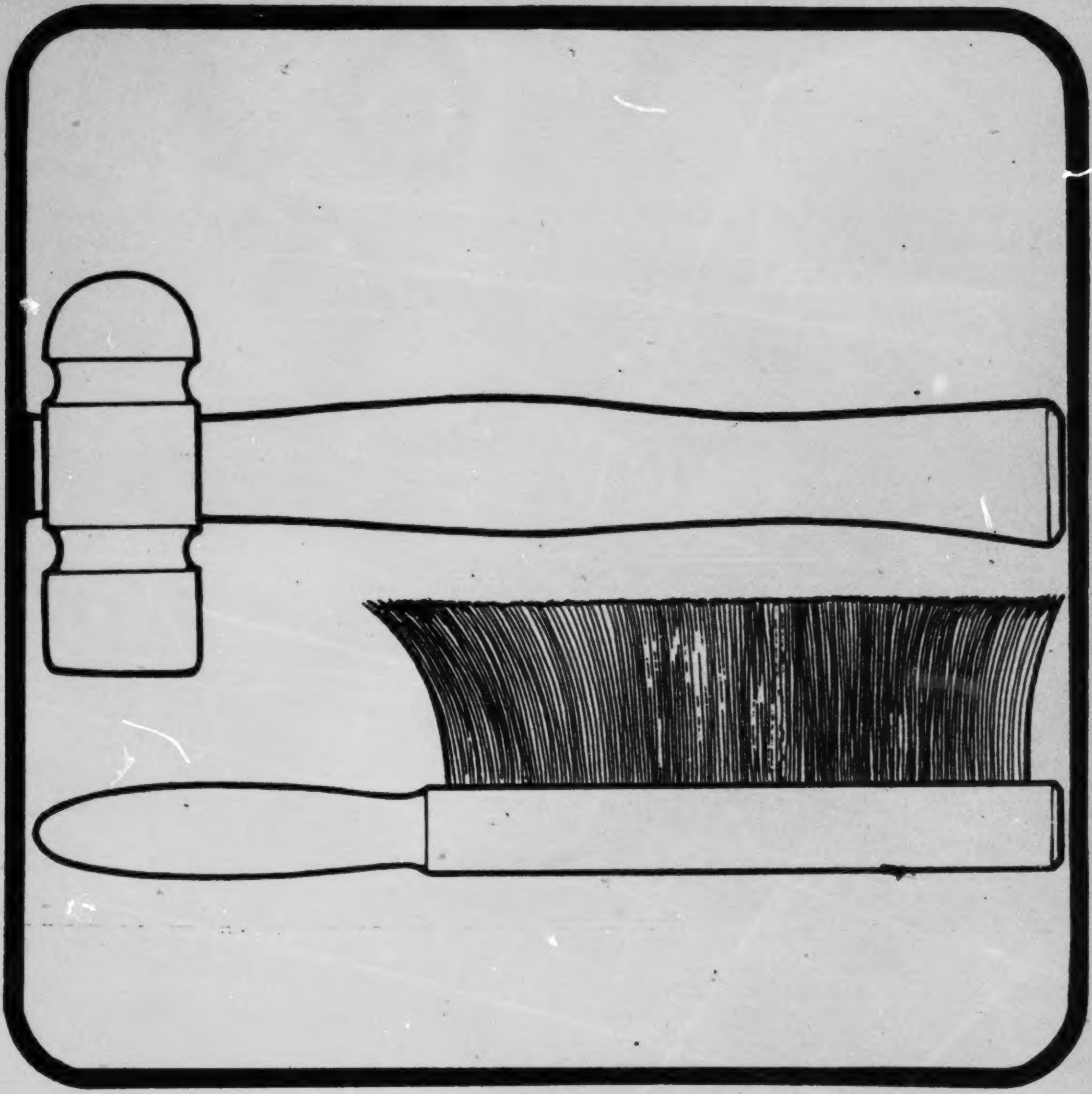


4. INSPECT WINDOW LOCKS TO CHECK FOR PROPER WORKING. SEE THAT THEY ARE SCREWED DOWN TIGHTLY AND THAT THEY MOVE FREELY AND THAT THE WINDOW CAN BE LOCKED.



5. IF WINDOW OPENS AND CLOSES, CHECK FOR FREEDOM OF MOVEMENT. IT SHOULD LIFT EASY AND IT SHOULD NOT FALL.





building maintenance & engineering

unit: WINDOWS

capital area career center

module: 2201 23 003 3 date: AUGUST 1977 level: I

skill title: INSTALL WINDOW LOCK SET

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

WORD GUIDE

CENTER PUNCH - TOOL USED TO MAKE A STARTER HOLE FOR A SCREW.

INSTALL - PUT IN.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO INSTALL A WINDOW LOCK SET.

AND IN ORDER TO DO THIS YOU WILL NEED:

A WINDOW LOCK SET

CENTER PUNCH

HAMMER

SCREWDRIVER

RULER

PENCIL

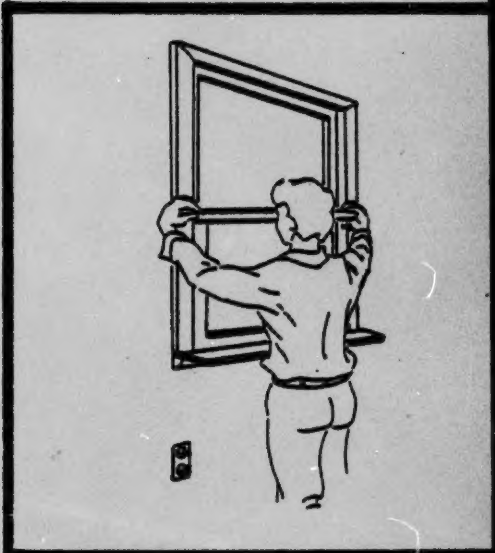
WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE INSTALLED THE LOCK SET IN THE CENTER OF THE WINDOW FRAMES SO THAT THE LATCH OPENS AND CLOSES WITHOUT TOUCHING EITHER WINDOW FRAME.

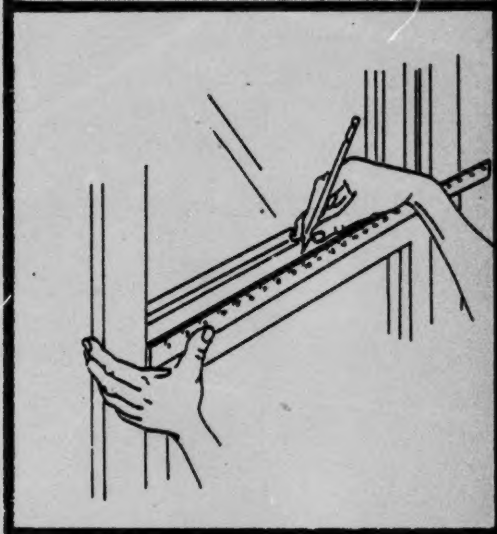
JOB STEPS

1. MEASURE THE DISTANCE ACROSS THE WINDOW. DIVIDE THE DISTANCE IN HALF. FOR INSTANCE, IF THE WINDOW IS 20 INCHES ACROSS, 20 INCHES DIVIDED BY 2 IS 10 INCHES.

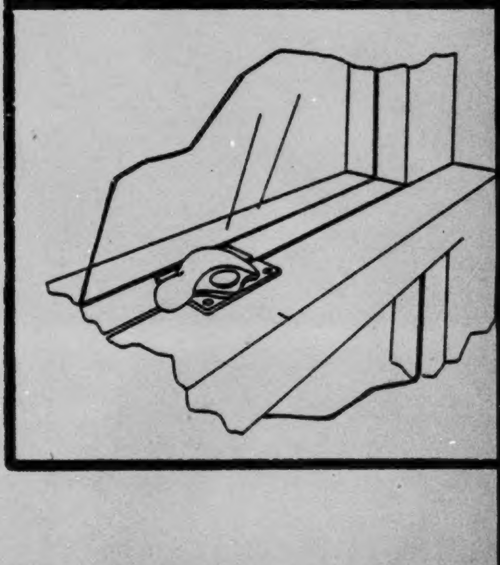
   EXAMPLE: 20" ÷ 2 = 10"



2. MEASURE IN FROM ONE SIDE THE DISTANCE FOUND IN STEP 1 AND PLACE A PENCIL MARK. THIS IS THE CENTER OF THE WINDOW.

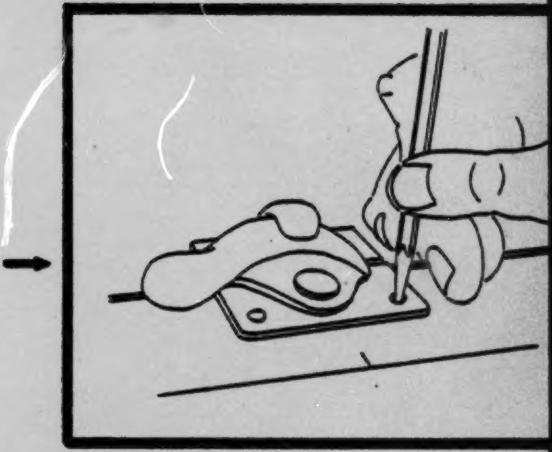


3. PLACE WINDOW LOCK ON THE BOTTOM OF THE TOP WINDOW AND THE TOP OF THE BOTTOM WINDOW. CENTER IT ON THE MARK AND IN A LOCKED POSITION.

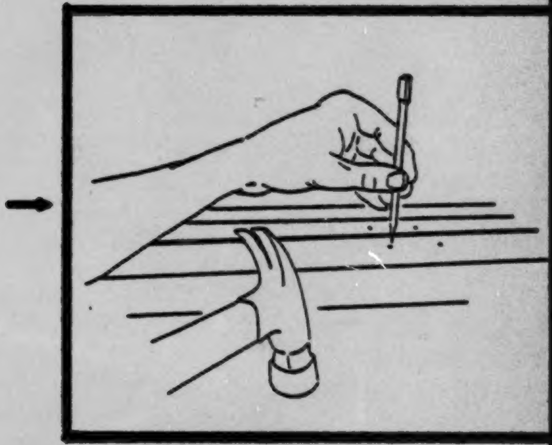


JOB STEPS

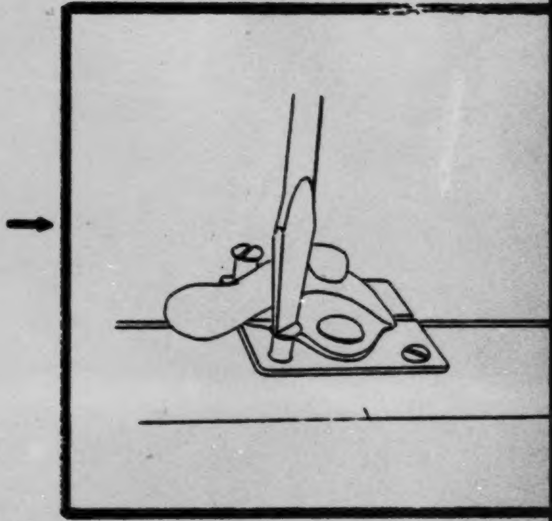
4. PLACE THE POINT OF A PENCIL IN EACH OF THE FOUR HOLES. MAKE A MARK WITH THE PENCIL.

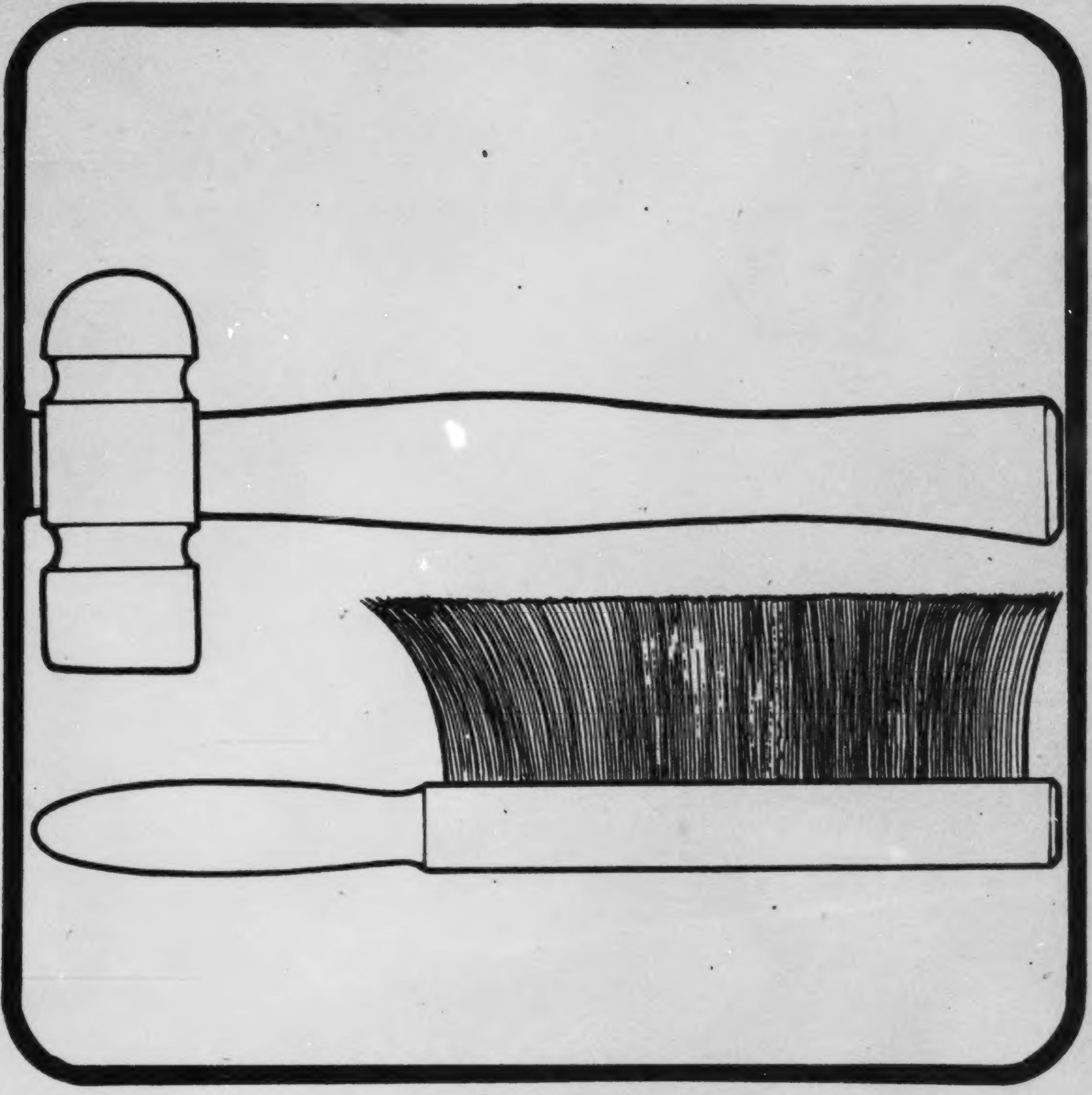


5. CENTER PUNCH EACH HOLE MARK WITH THE PUNCH AND HAMMER.



6. PLACE A SCREW IN EACH HOLE AND FASTEN TIGHTLY WITH A SCREWDRIVER.





building maintenance & engineering

unit: WINDOWS

capital area career center

module: 2201 23 004 3 **date:** AUGUST 1977 **level:** II

skill title: LUBRICATE WINDOWS

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

WORD GUIDE

LUBRICATE - OIL OR GREASE TO KEEP IN WORKING ORDER.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO LUBRICATE WINDOW TRACKS.

AND IN ORDER TO DO THIS YOU WILL NEED:

A CAN OF SILICONE SPRAY

A WINDOW

WE WILL KNOW YOU CAN DO IT WHEN:

YOU LUBRICATE THE WINDOW SO THAT MOVES SMOOTHLY UP, DOWN OR SIDEWAYS, WITHOUT STICKING.

WORD GUIDE

FRICTION - THE RUBBING OF ONE OBJECT AGAINST ANOTHER - TO RUB.

INFORMATION

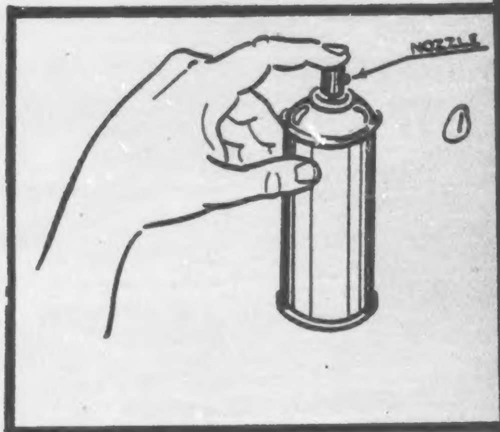
PARTS WHICH RUB TOGETHER MUST BE LUBRICATED OFTEN TO KEEP THEM WORKING SMOOTHLY.

YOU CAN USE SILICONE SPRAY ON EITHER WOOD OR ALUMINUM TRACKS, BUT NOT ON WINDOWS THAT MOVE ON A FRICTION TRACK. A FRICTION TRACK IS A WOOD-FRAME WINDOW WITH AN ALUMINUM TRACK ON WHICH THE WINDOW MOVES UP AND DOWN. THE ALUMINUM PRESSES AGAINST THE WOOD FRAME, HOLDING THE FRAME IN PLACE. IF YOU LUBRICATE THIS TYPE WINDOW, THE FRAME WILL SLIP OUT OF PLACE.

CAUTION: DO NOT POINT SPRAY AT ANYTHING EXCEPT THE WINDOW TRACK.

JOB STEPS

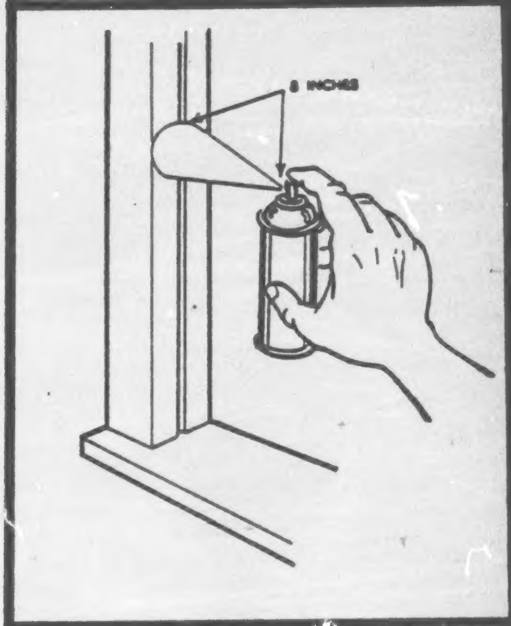
1. PLACE CAN IN YOUR HAND SO THE SPRAY NOZZLE IS POINTING AWAY FROM YOU. →



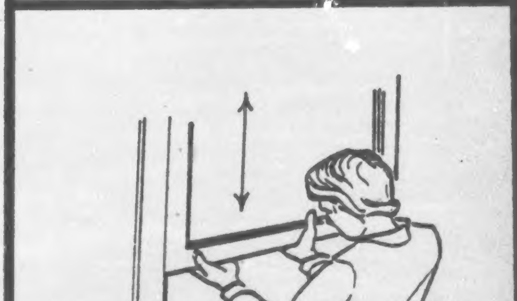
2. DIRECT THE SPRAY AT THE WINDOW TRACK. LEAVE A DISTANCE OF 8 INCHES BETWEEN NOZZLE AND TRACK. →

3. PRESS SPRAY BUTTON DOWN AND MOVE HAND. SPRAY SLOWLY OVER THE TRACK. →

4. DO THE SAME TO THE OTHER TRACK. →



5. SET SPRAY CAN DOWN AND MOVE THE WINDOW THREE TIMES EACH WAY TO LUBRICATE THE WINDOW FRAME. →



building maintenance & engineering

unit: DOOR MAINTENANCE

capital area career center

module: 2201 24 001 3 date: 5/77 level: I

skill title: VISUAL INSPECTION AND MAINTENANCE OF DOORS

developed & written by: DWIGHT SMITH

visuals by: GLEN COOLEY

WORD GUIDE

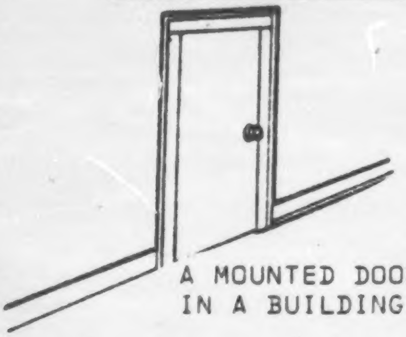
VISUALLY INSPECT - TO LOOK AT CAREFULLY. PAY ATTENTION TO ANY PROBLEMS YOU SEE.

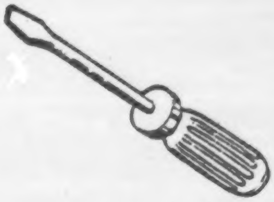
PERFORMANCE OBJECTIVE

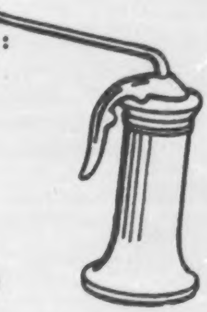
YOU ARE GOING TO LEARN:

HOW TO INSPECT AND MAINTAIN DOORS IN A BUILDING.

AND IN ORDER TO DO THIS YOU WILL NEED:


A MOUNTED DOOR IN A BUILDING


SCREWDRIVER


OIL CAN

PAPER AND PENCIL

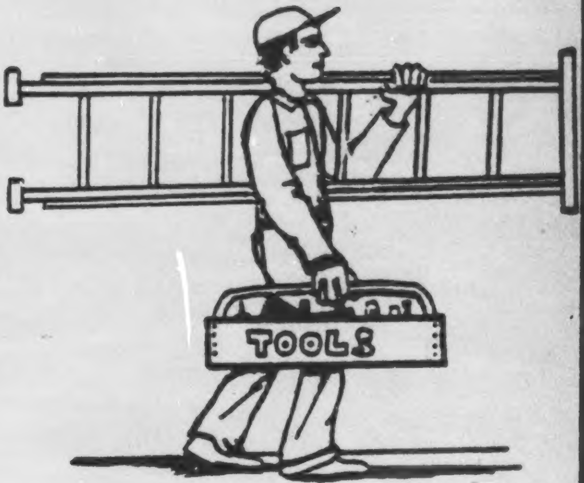
WE WILL KNOW YOU CAN DO IT WHEN:

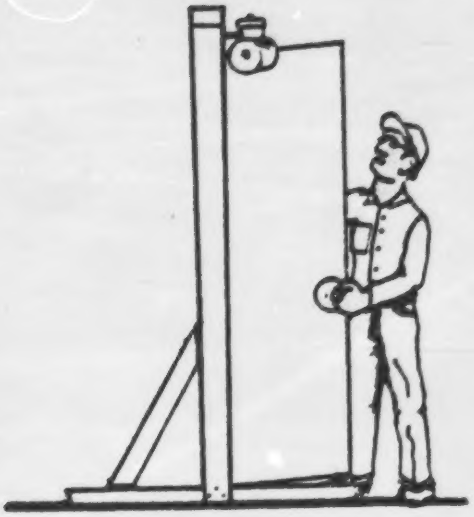
YOU HAVE INSPECTED AND MAINTAINED THE DOORS SO THAT:

1. YOU HAVE OILED THE HINGES.
2. YOU HAVE PROPERLY ADJUSTED SWEEP AND LATCH SPEEDS.
3. YOU HAVE WRITTEN DOWN ANY DAMAGES.
4. YOU HAVE CHECKED THAT THE DOOR KNOBS, KICK PLATES, HINGES AND DOOR CLOSERS ARE TIGHT.

JOB STEPS

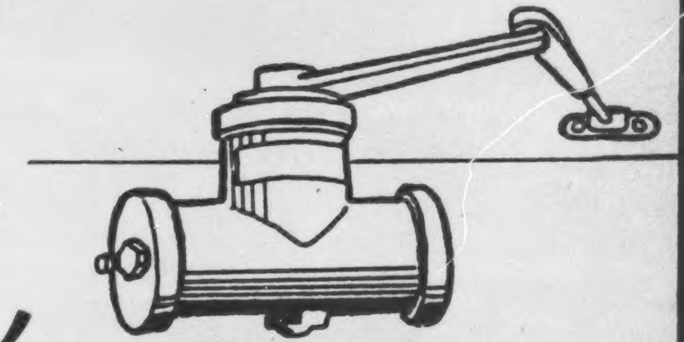
1. GET THE MATERIALS AND GO TO YOUR WORK AREA.

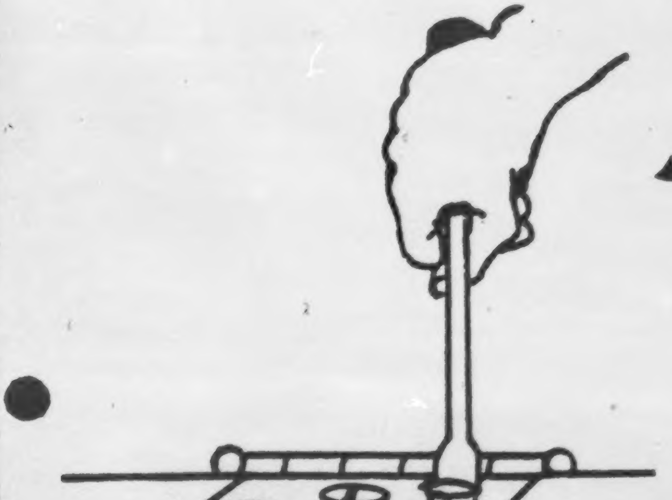




2. CHECK DOOR KNOB BY OPENING AND CLOSING THE DOOR 3 OR 4 TIMES. CHECK FOR LOOSE SCREWS AND TIGHTEN ANY YOU FIND.

3. LOOK AT THE DOOR-CLOSER. USE THE SCREWDRIVER TO TIGHTEN ANY LOOSE SCREWS.

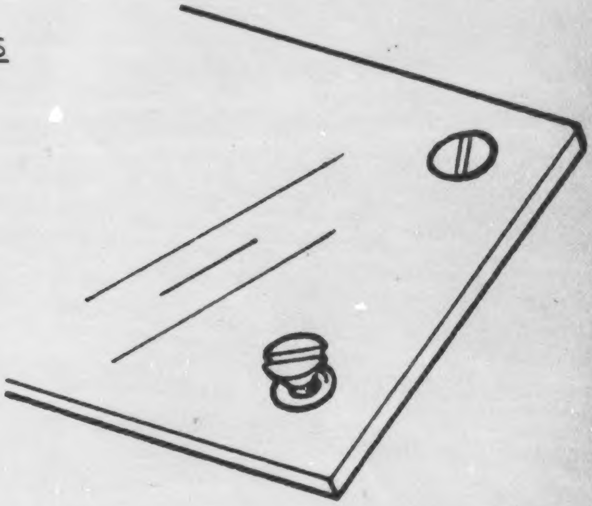




4. CHECK THE DOOR HINGES FOR LOOSE SCREWS AND TIGHTEN ANY YOU FIND.

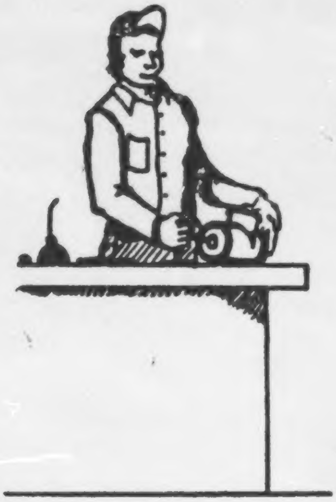
WORD GUIDE

KICK-PLATE - A METAL PLATE ON THE BOTTOM OF A DOOR WHICH PROTECTS DOOR FROM SCRATCHES AND DENTS.

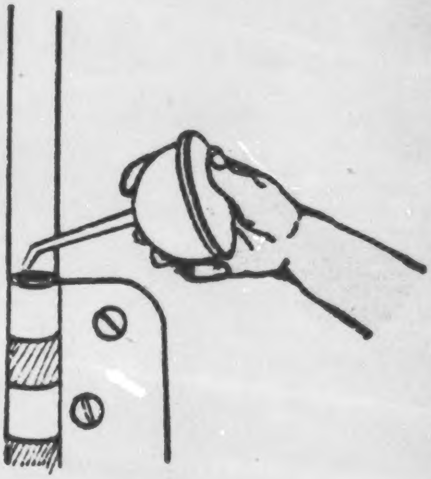


JOB STEPS

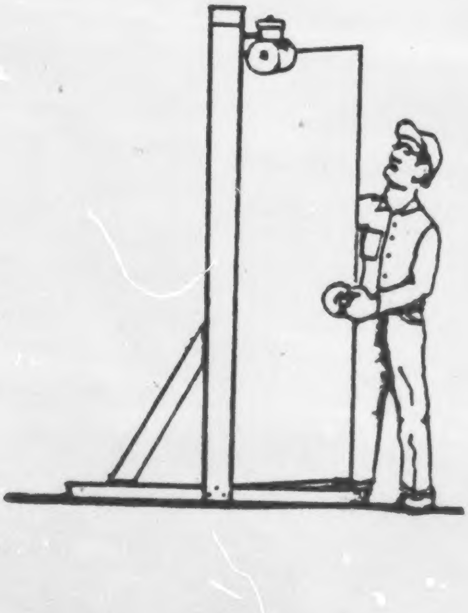
5. CHECK THE KICK-PLATE FOR LOOSE SCREWS AND TIGHTEN ANY YOU FIND.



6. CHECK THE DOOR CLOSER. ADJUST THE SWEEP AND LATCH SPEED LIKE YOU DID IN MOD 2201 02 24 3.



7. USING THE OIL CAN, OIL THE HINGES.



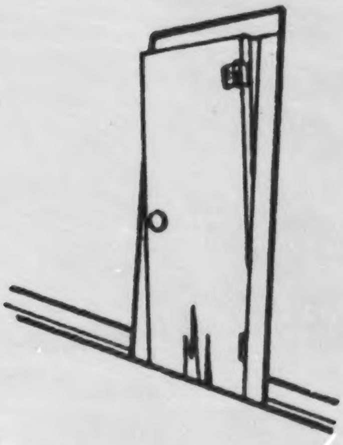
8. OPEN AND CLOSE THE DOOR 5 OR 6 TIMES TO WORK IN THE OIL.

JOB STEPS

9. CHECK THE DOOR FOR DAMAGE.

LOOK FOR:

- A. BROKEN OR WORN PARTS.
- B. WOOD SLIVERS.
- C. DAMAGED FINISH.
- D. DENTS.



10. NOW YOU CAN VISUALLY INSPECT AND MAINTAIN DOORS.

building maintenance & engineering

unit: DOOR MAINTENANCE

capital area career center

module: 2201 24 002 3 date: 5/77 level: II

skill title: HANG A DOOR

developed & written by: DWIGHT SMITH

visuals by: GLEN COOLEY

WORD GUIDE

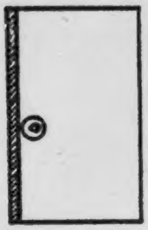
"HANG" A DOOR - TO INSTALL, OR PUT IN A DOOR.

PERFORMANCE OBJECTIVE

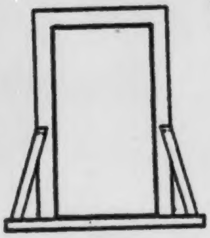
YOU ARE GOING TO LEARN:

HOW TO HANG A DOOR.

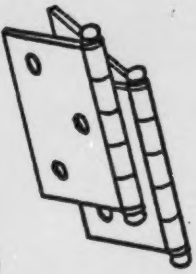
AND IN ORDER TO DO THIS YOU WILL NEED:



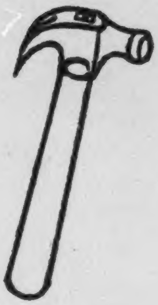
DOOR



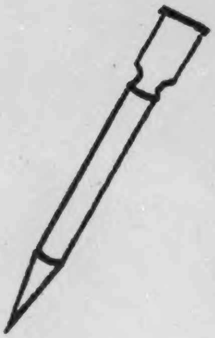
DOOR OPENING



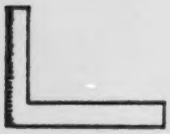
2 HINGES



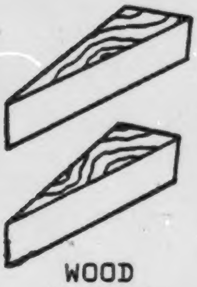
HAMMER



CENTER PUNCH

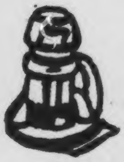


TRI-SQUARE

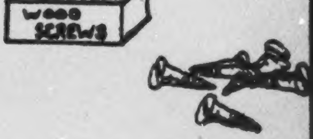


WOOD WEDGES

PENCIL & PAPER



ROUTER AND BIT

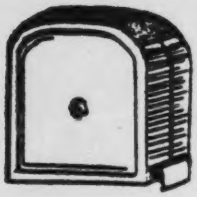


12 WOOD SCREWS

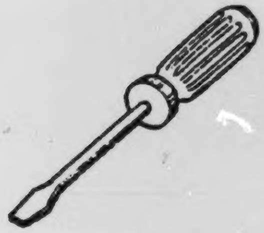
WORD GUIDE

__CLEARANCE__ - SPACE IN WHICH SOME THING CAN MOVE FREELY WITHOUT STICKING, BUMPING, OR STOPPING.

. . . YOU WILL NEED:



STEEL TAPE MEASURE



SCREWDRIVER

WE WILL KNOW YOU CAN DO IT WHEN:

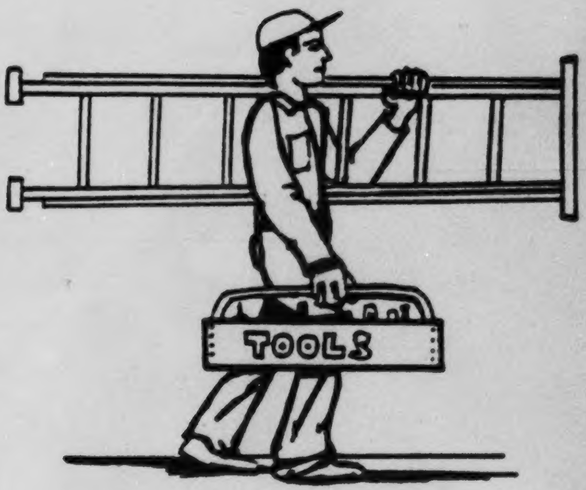
YOU HAVE HUNG THE DOOR SO THAT:

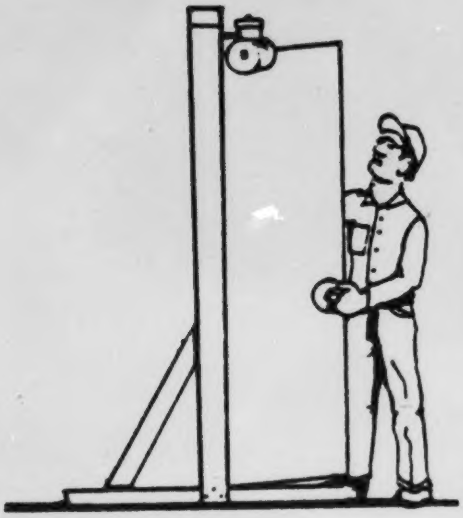
A. THE DOOR HAS 1/8 INCH CLEARANCE ON TOP AND SIDES, AND 1 INCH ON THE BOTTOM.

B. THE DOOR DOES NOT STICK WHEN OPENED OR CLOSED.

JOB STEPS

1. GET THE EQUIPMENT AND SUPPLIES AND GO TO YOUR WORK AREA.

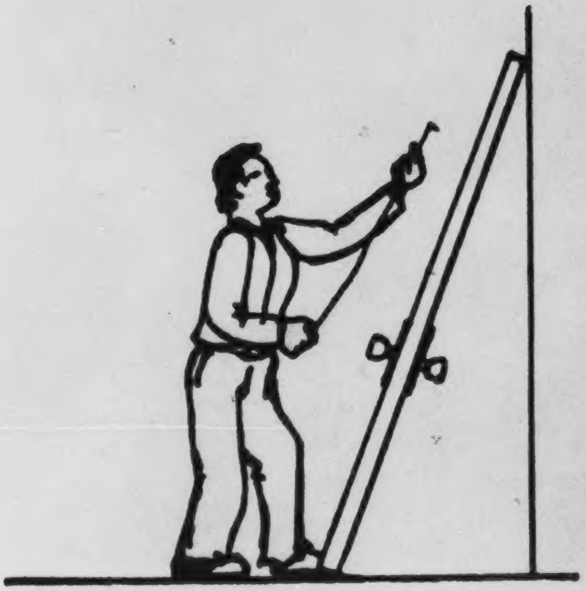




2. PUT THE DOOR IN THE DOOR OPENING.

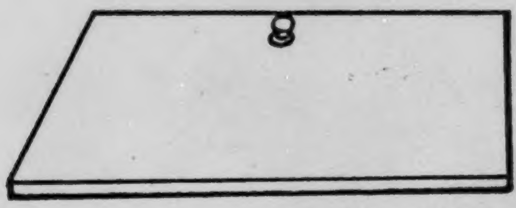
3. USING THE STEEL TAPE-MEASURE, MEASURE HOW MUCH DOOR NEEDS TO BE TRIMMED FOR A GOOD FIT.

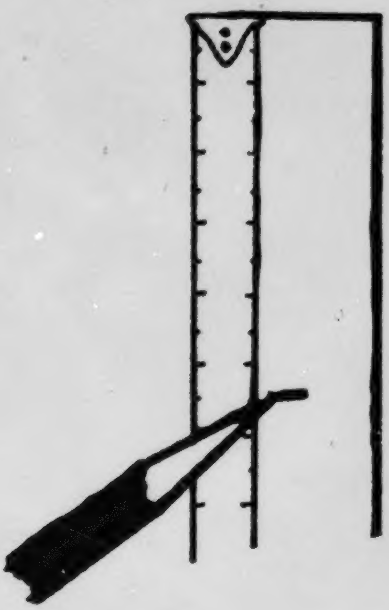
   NOTE: ASK YOUR INSTRUCTOR FOR HELP IN TRIMMING THE DOOR TO FIT.



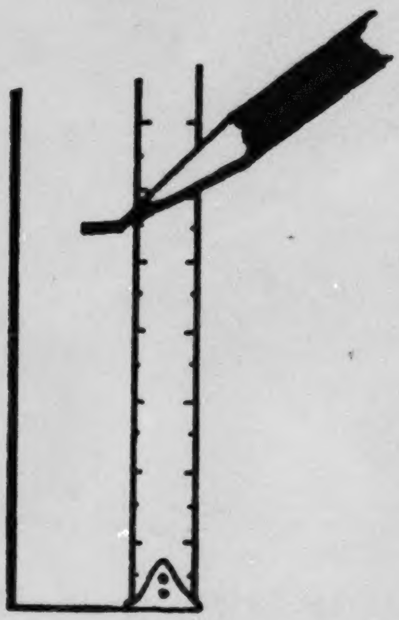
JOB STEPS

4. PLACE THE DOOR FLAT ON THE FLOOR.

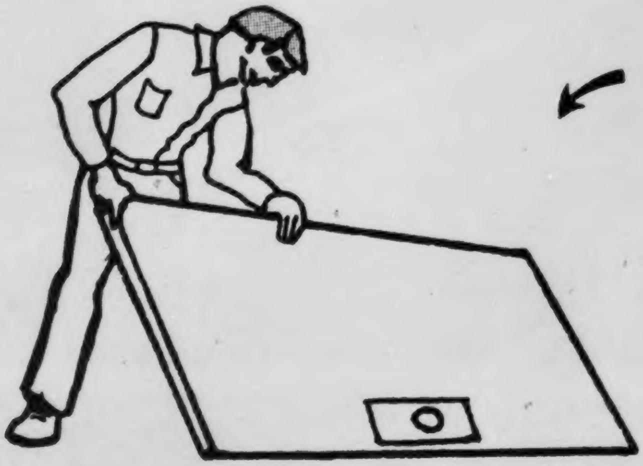




5. USE THE STEEL TAPE-MEASURE AND MEASURE 7 INCHES DOWN FROM THE TOP ON THE HINGE SIDE OF THE DOOR. MAKE A PENCIL MARK ON THE EDGE.



6. MEASURE 7 INCHES FROM THE BOTTOM AND MARK IT LIKE YOU DID IN JOB STEP 5.

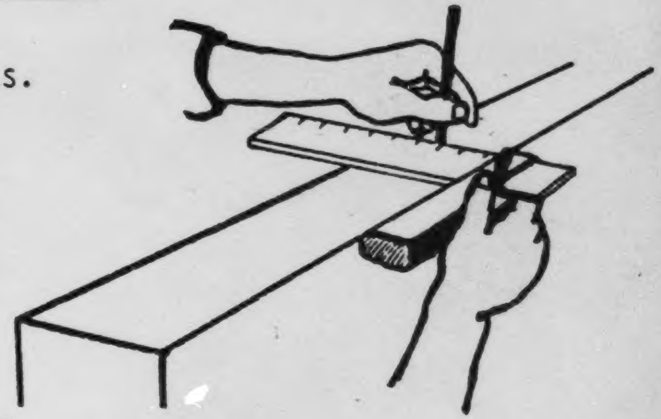


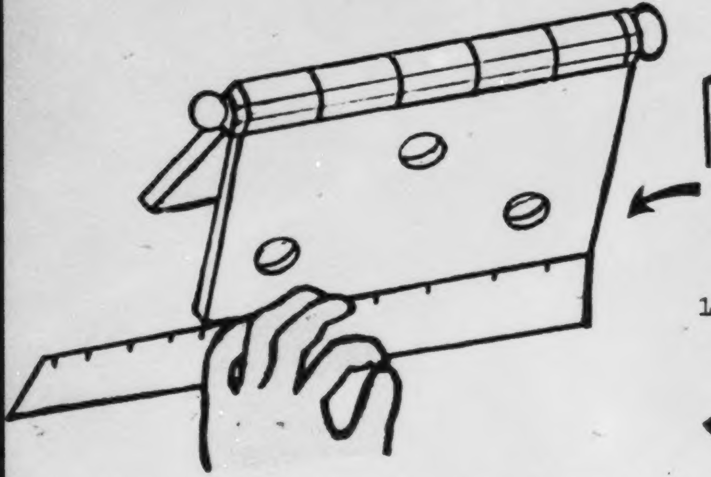
7. TURN THE DOOR ON ITS SIDE, WITH THE HINGE EDGE FACING UP.

JOB STEPS

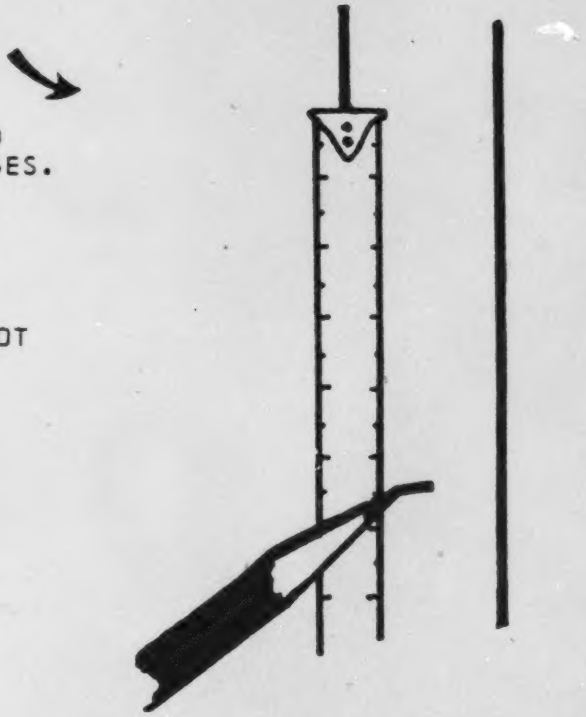
8. PUT THE TRI-SQUARE ON THE MARKS.

9. DRAW A PENCIL LINE ACROSS THE EDGE OF THE DOOR.





10. MEASURE ONE OF THE HINGES YOU WILL USE.



11. USE THE STEEL TAPE-MEASURE AND MEASURE THE LENGTH OF THE HINGES. MEASURE IN, TOWARD THE CENTER OF THE DOOR.

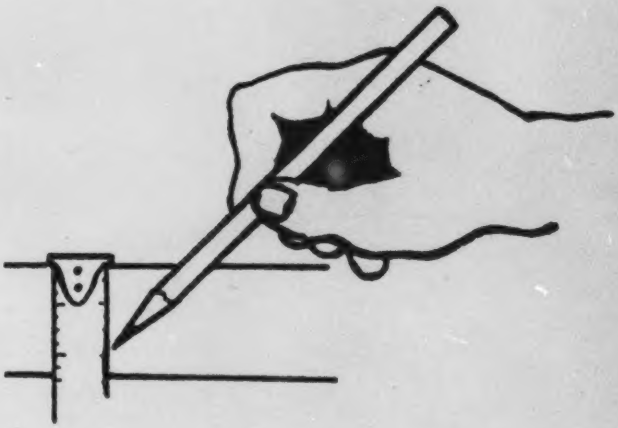
12. USING THE PENCIL, MARK THE SPOT WHERE THE HINGE WILL END.

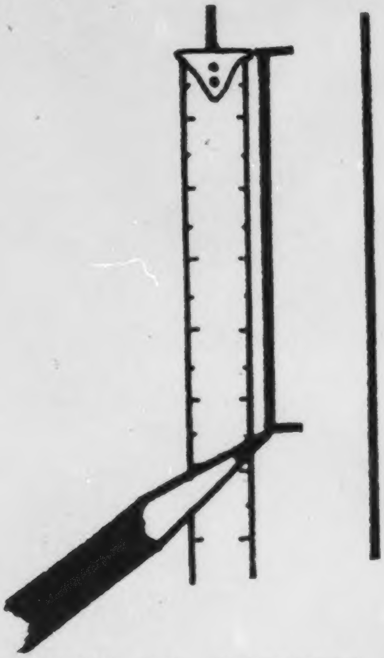
13. REPEAT JOB STEPS 8, 9, 10, 11, AND 12 ON THE OTHER END OF THE DOOR.

JOB STEPS

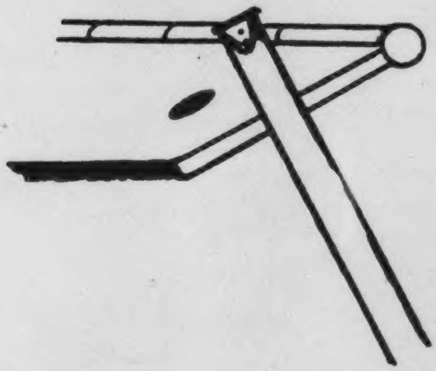
14. USE THE STEEL TAPE-MEASURE AND MEASURE IN 1/4 INCH FROM THE INSIDE OF THE DOOR.

NOTE: THE HINGE PIN MUST BE ON THE OUTSIDE OF THE DOOR.

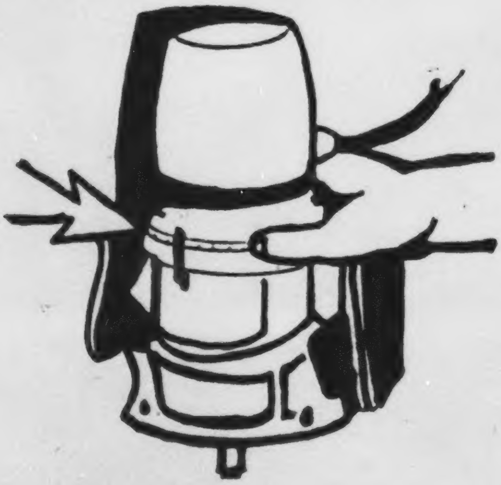




15. DRAW A LINE BETWEEN THE MARKS YOU MADE FOR THE HINGES. DRAW IT LIKE THIS:



16. MEASURE THE THICKNESS OF THE HINGE.



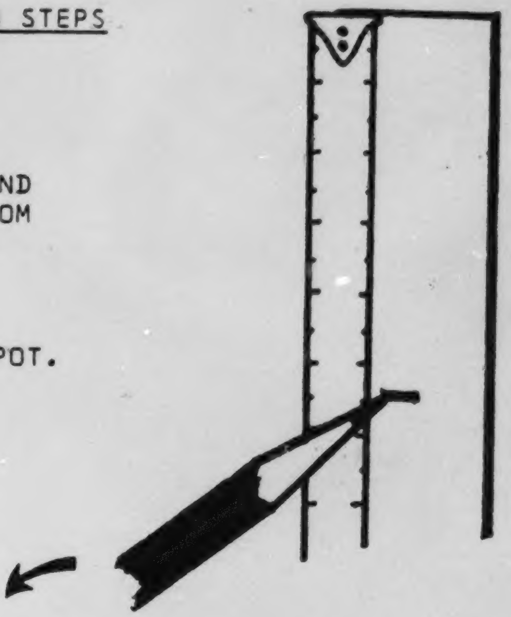
17. SET THE ROUTER BIT TO THE THICKNESS OF THE HINGE.

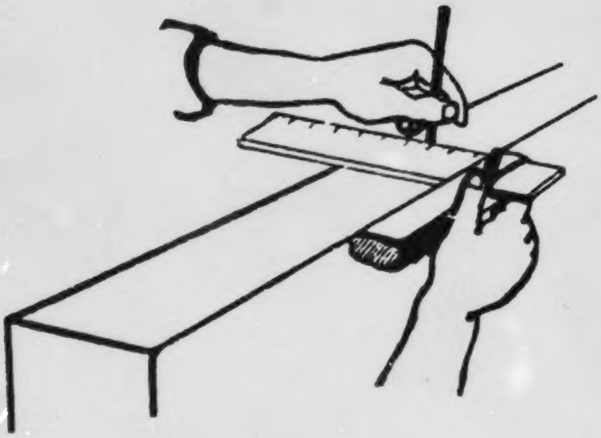
18. ASK YOUR INSTRUCTOR TO HELP YOU ROUT-OUT INSIDE THE LINES YOU DREW ON THE EDGE OF THE DOOR.

JOB STEPS

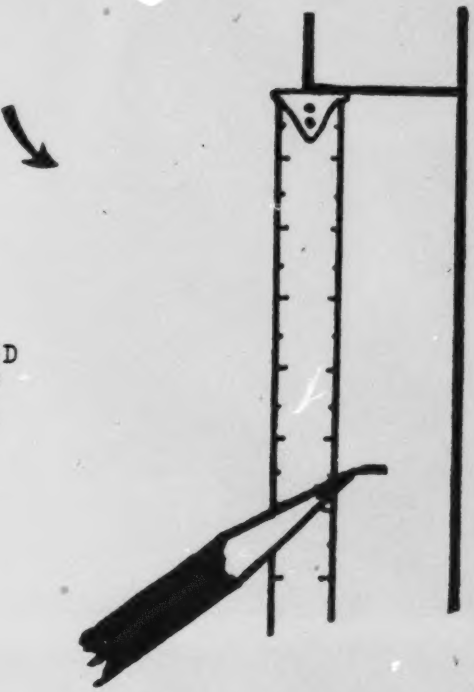
19. USE THE STEEL TAPE-MEASURE AND MEASURE 7 1/8 INCHES DOWN FROM THE TOP OF THE DOOR OPENING.

20. USING THE PENCIL, MARK THE SPOT.





21. USING THE TRI-SQUARE, DRAW A SQUARE LINE ACROSS THE DOOR CASING.

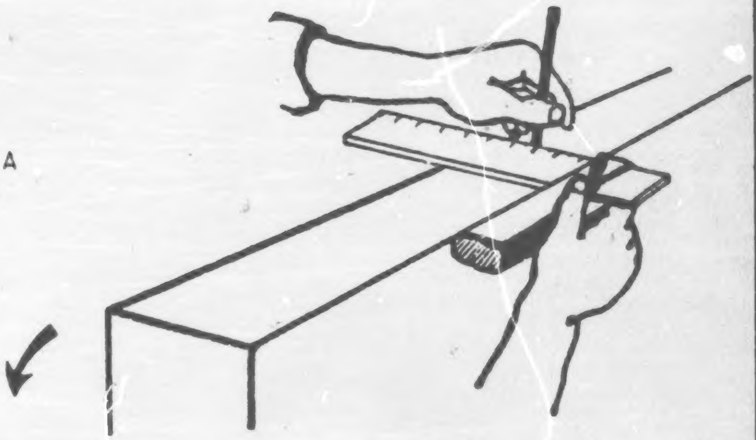


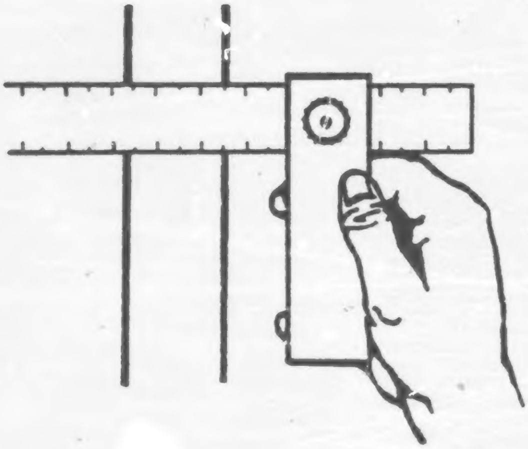
22. MEASURE DOWN FROM THE LINE USED IN JOB STEP 21 THE DISTANCE OF THE HINGE USED IN JOB STEP 11.

23. MARK THE SPOT WITH A PENCIL.

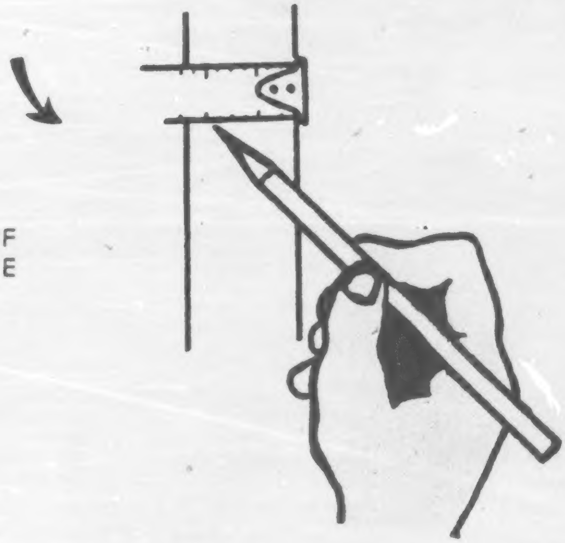
JOB STEPS

24. USING THE TRI-SQUARE, DRAW A SQUARE LINE ACROSS THE DOOR CASING.





25. USING THE SCALE ON THE TRI-SQUARE, MEASURE THE DISTANCE FROM THE LINE YOU DREW IN JOB STEP 14 TO THE EDGE OF THE DOOR. WRITE DOWN THIS DISTANCE.

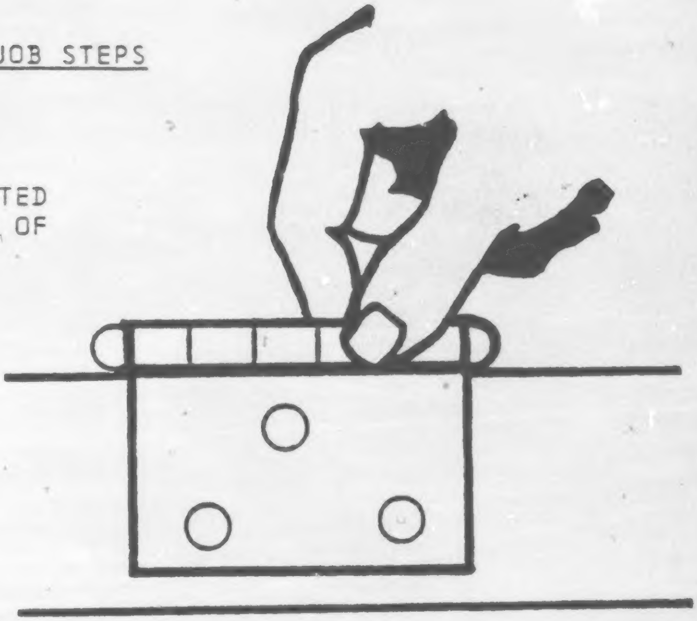


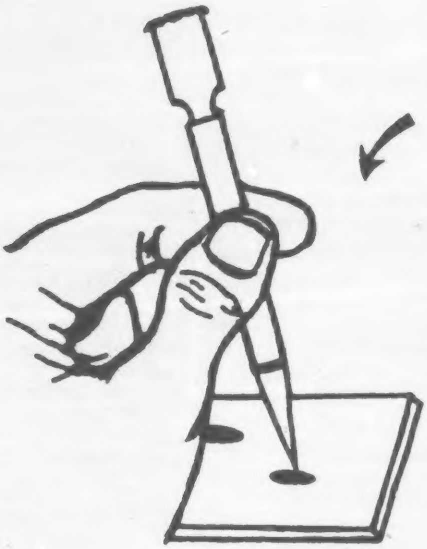
26. MEASURE IN FROM THE FRONT OF THE DOOR CASING THE DISTANCE MEASURED IN JOB STEP 22.

27. ASK YOUR INSTRUCTOR TO HELP YOU ROUT-OUT THE THICKNESS OF THE DOOR FROM BETWEEN THE LINES YOU DREW.

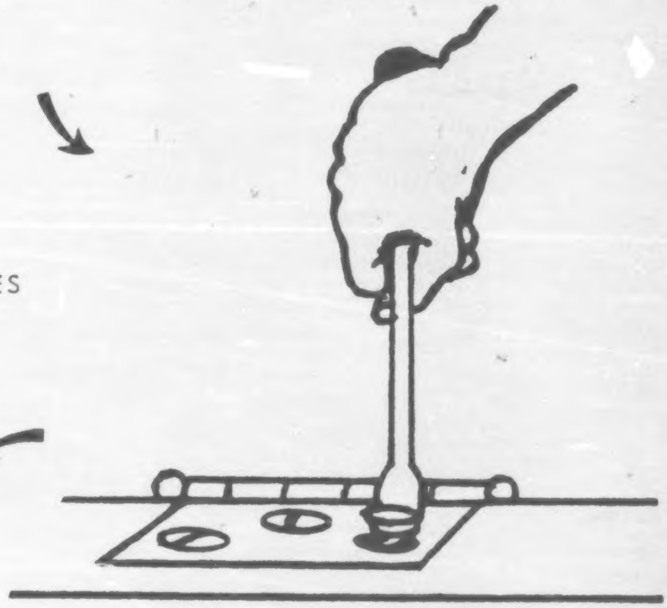
JOB STEPS

28. PUT THE HINGES INTO THE ROUTED AREAS AT THE TOP AND BOTTOM OF THE DOOR.

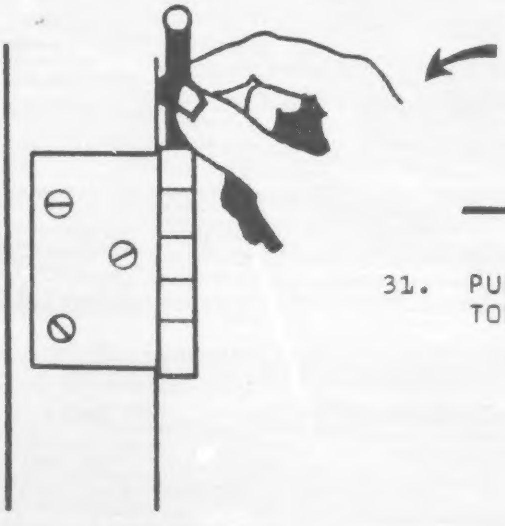




29. USING THE HAMMER AND THE CENTER PUNCH, MARK THE CENTER OF THE HINGE HOLES.



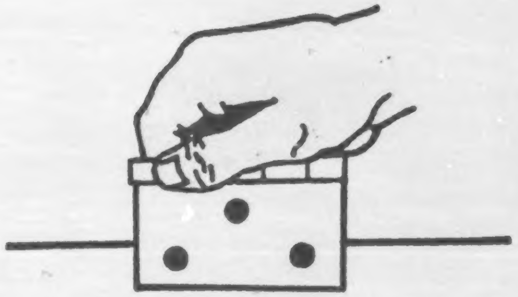
30. USING SCREWS AND SCREWDRIVER FASTEN THE TOP AND BOTTOM HINGES TO THE DOOR.

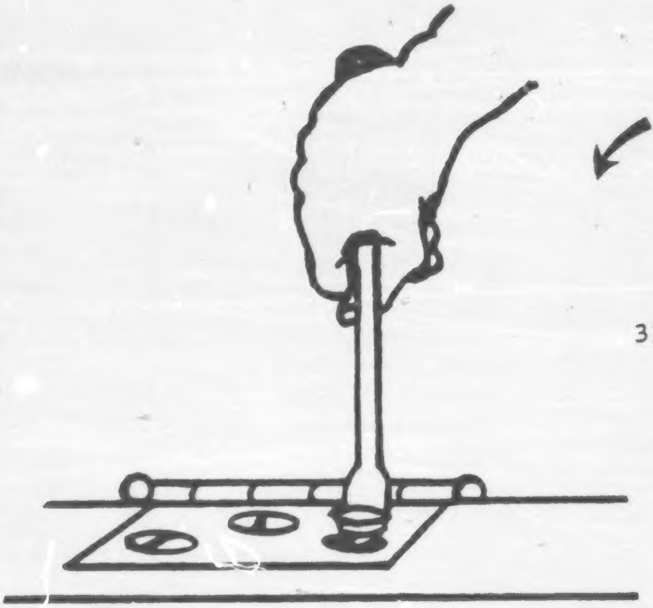


31. PULL THE HINGE PIN OUT OF THE TOP HINGE.

JOB STEPS

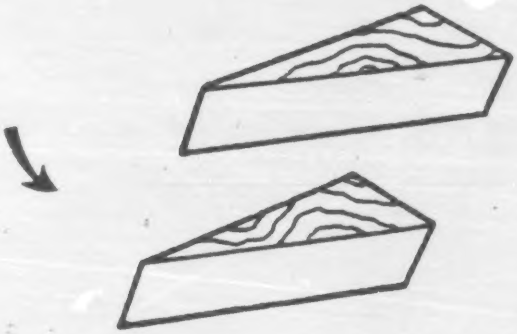
32. PUT THE HINGE-HALF INTO THE ROUTED-OUT PART OF THE UPPER DOOR CASING.

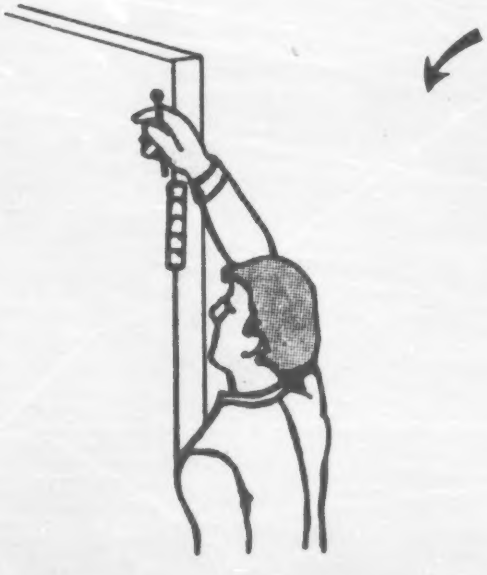




33. FASTEN THIS HINGE-HALF ONTO THE DOOR LIKE YOU DID THE OTHER HINGE-HALF.

34. GET THE WOOD WEDGES READY AND KEEP THEM NEARBY.

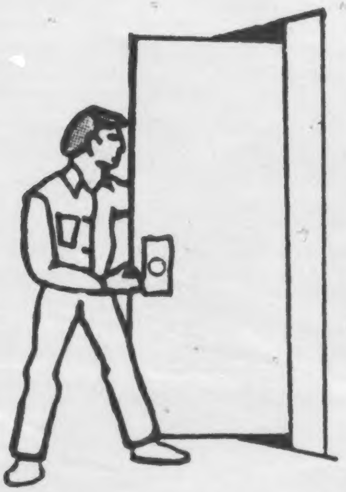


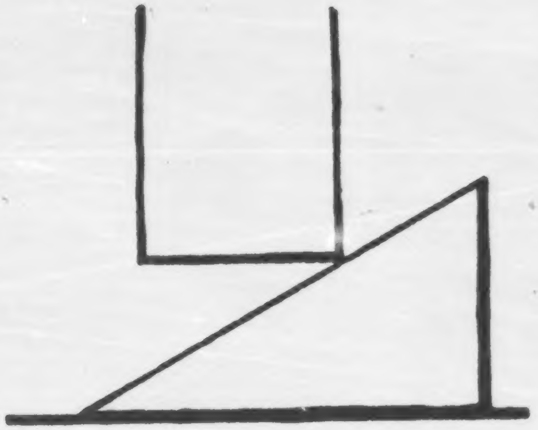


35. PUT THE DOOR UP ON THE TOP HINGE AND PUT THE PIN THROUGH THE HINGE.

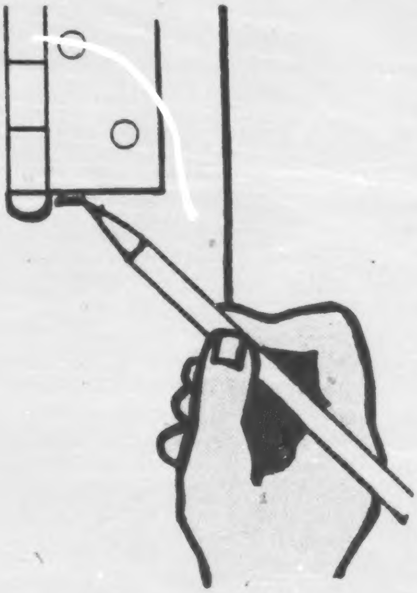
JOB STEPS

36. OPEN THE DOOR ABOUT HALFWAY.

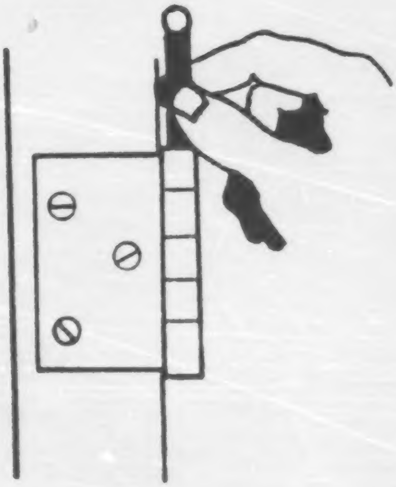




37. USING THE WOOD WEDGES, LINE UP THE BOTTOM OF THE DOOR SO THAT THE DOOR IS LEVEL.



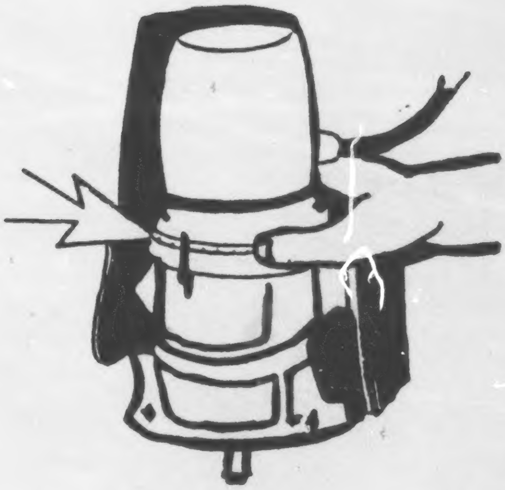
38. USING THE PENCIL, DRAW A LINE AROUND THE BOTTOM HINGE ON THE DOOR CASING.

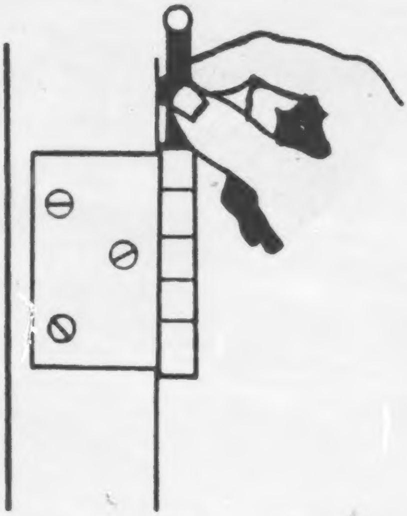


39. TAKE THE PIN OUT OF THE HINGE AND THE REMOVE THE DOOR.

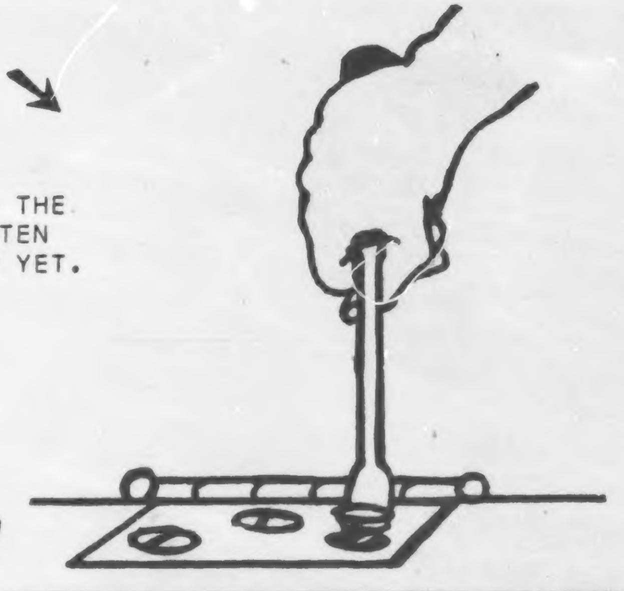
JOB STEPS

40. ROUT-OUT THE HINGE AREA LIKE YOU DID IN JOB STEP 27.

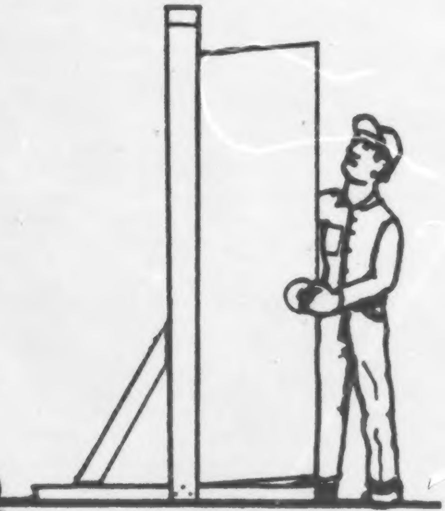




41. TAKE THE PIN OUT OF THE LOWER HINGE.



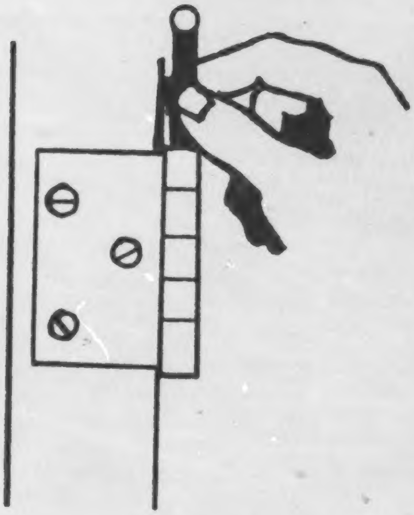
42. SCREW THE HALF HINGE INTO THE ROUTED AREA. DO NOT TIGHTEN THE SCREWS ALL THE WAY IN YET.

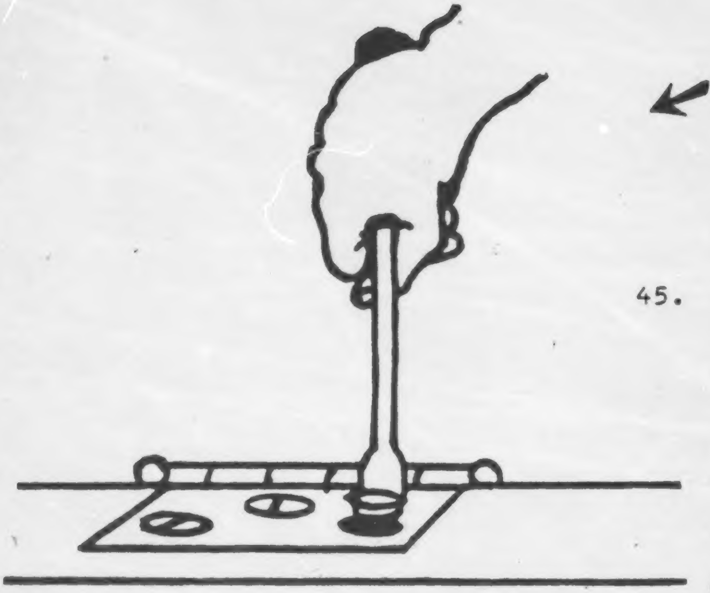


43. PUT THE DOOR BACK ON THE HINGES.

JOB STEPS

44. PUT BOTH PINS INTO THE HINGES.

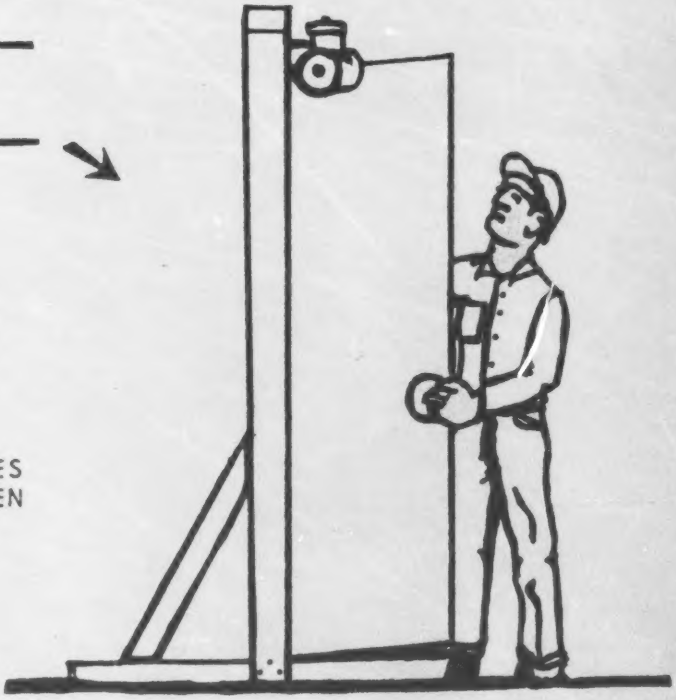




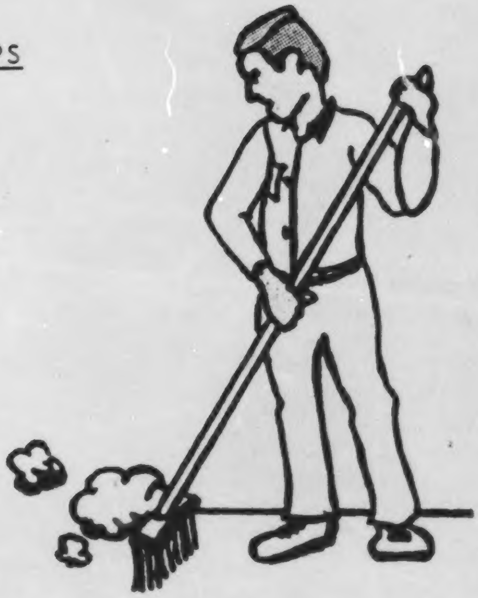
45. TIGHTEN THE SCREWS IN THE BOTTOM HINGE.

46. CHECK YOUR WORK BY OPENING AND CLOSING THE DOOR 3 OR 4 TIMES. THE DOOR MUST NOT STICK WHEN EITHER OPENING OR CLOSING.

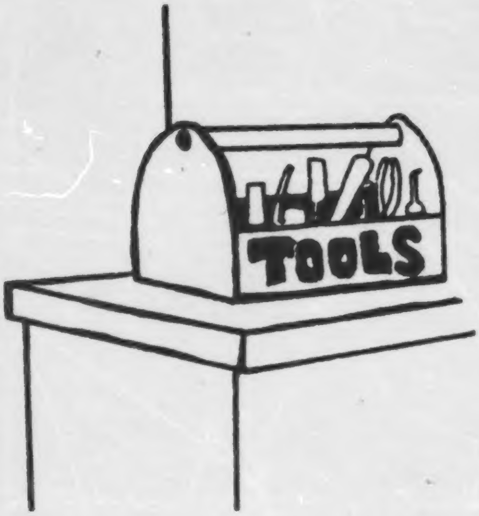
NOTE: HEAVY DOORS NEED 3 HINGES THE THIRD IS SET HALFWAY BETWEEN THE OTHER TWO.



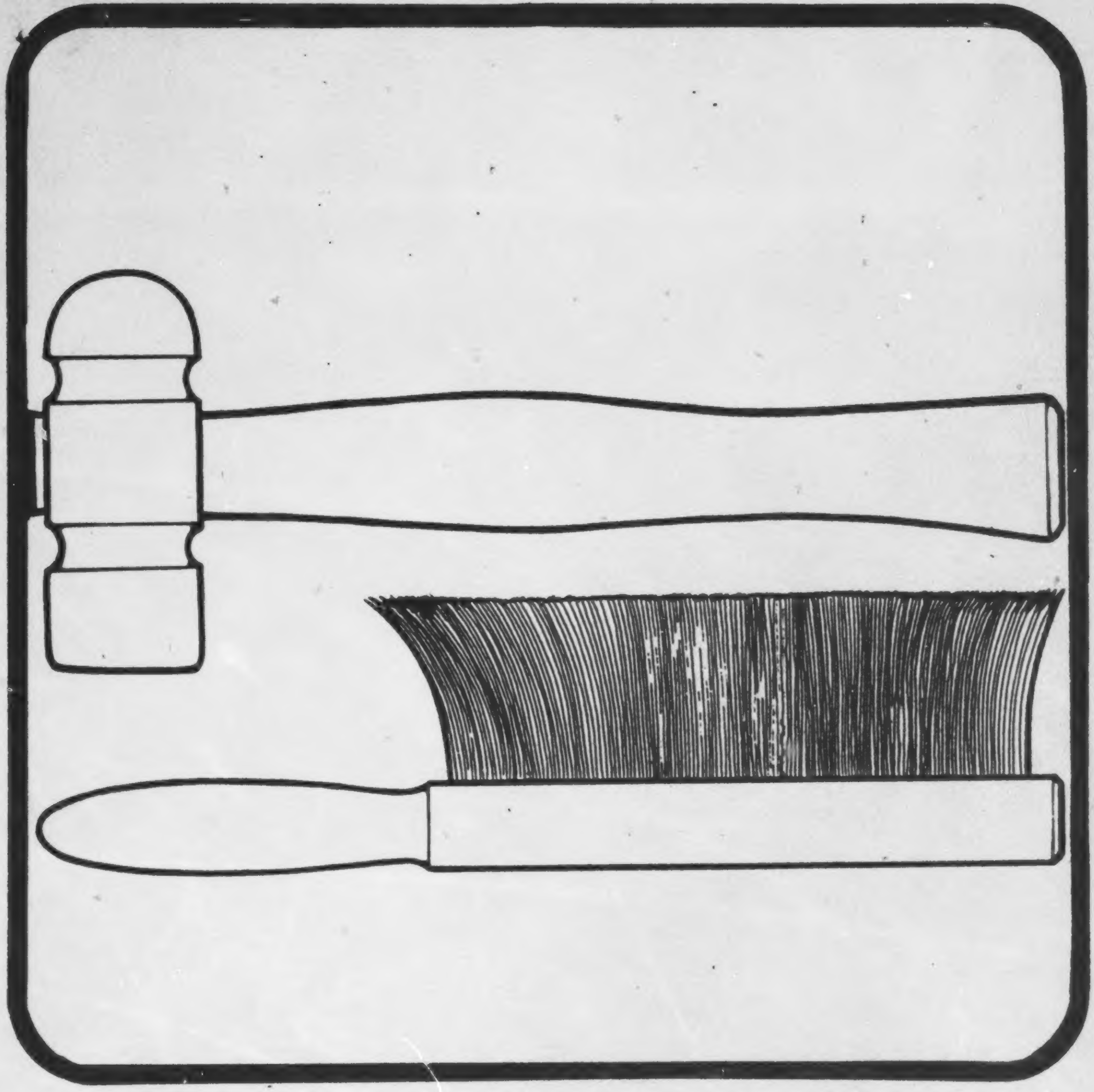
JOB STEPS



47. CLEAN UP ALL SAWDUST IN WORK AREA.



48. CLEAN UP THE REST OF YOUR WORK AREA AND PUT AWAY ALL THE SUPPLIES AND EQUIPMENT.



building maintenance & engineering

unit: DOOR MAINTENANCE

capital area career center

module: 2201 24 003 3 **date:** AUGUST 1977 **level:** II

skill title: INSTALL DOOR LOCKS

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

WORD GUIDE

INSTALL – PUT IN.

ASSEMBLY – UNIT OF SEPARATE PIECES WHICH FIT TOGETHER.

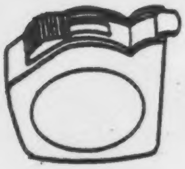
LATCHES – LOCKS.

PERFORMANCE OBJECTIVE

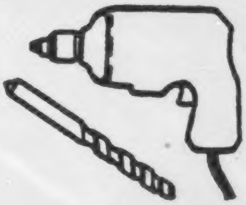
YOU ARE GOING TO LEARN:

HOW TO INSTALL A DOOR LOCK ASSEMBLY.

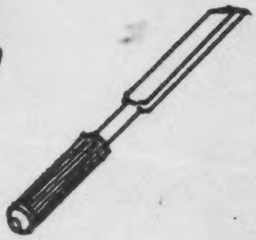
AND IN ORDER TO DO IT YOU WILL NEED:

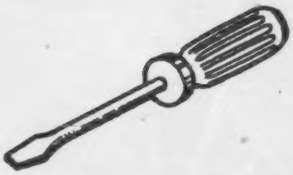

STEEL TAPE MEASURE

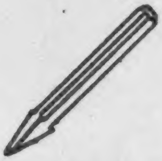
PENCIL


DRILL AND BITS

HAMMER


WOOD CHISEL

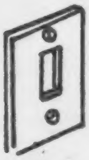

SCREWDRIVER

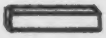

CENTER-PUNCH

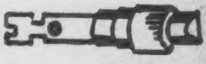
DOOR

LOCK

ASSEMBLY


1. LATCH PLATE


2. SHAFT


3. SPRING LATCH

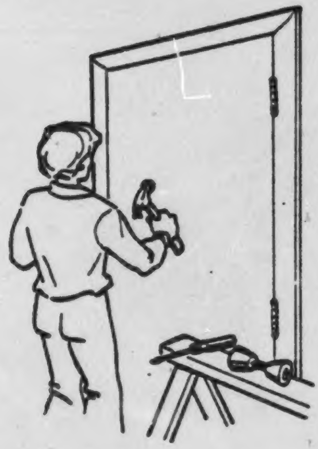
WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU INSTALL THE DOOR KNOB SO THAT IT DOESN'T STICK WHEN TURNED LEFT OR RIGHT.
2. YOU INSTALL DOOR SO THAT THE LOCK EASILY CLOSES AND LATCHES.

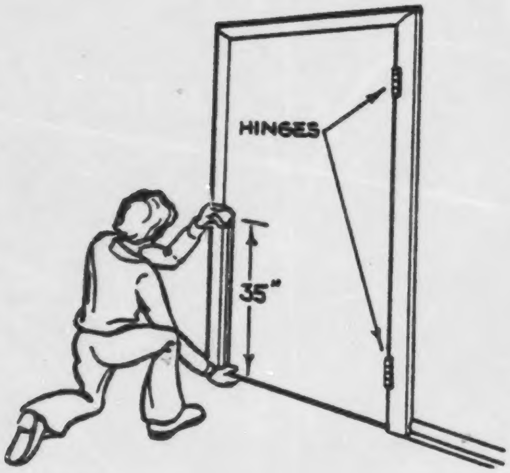
WORD GUIDE

BACKSET - DISTANCE FROM THE EDGE OF DOOR TO CENTER OF DOORKNOB HOLE.

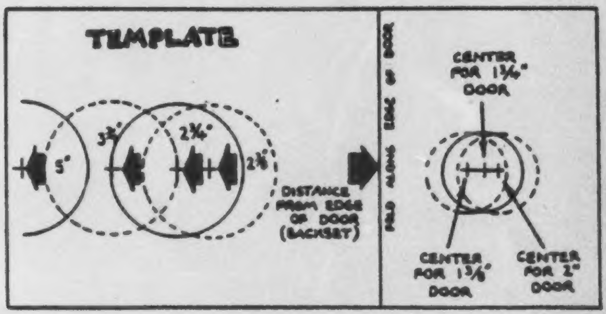
JOB STEPS



1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.



2. FROM THE BOTTOM OF DOOR, ON THE SIDE OPPOSITE THE HINGES, MEASURE 35" UP. MARK THIS SPOT.

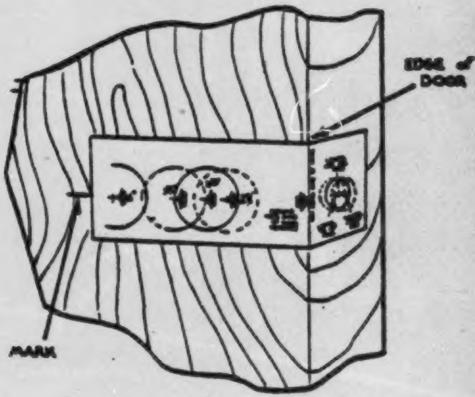

TEMPLATE
5"
3¾"
2¾"
2⅜"
DISTANCE FROM EDGE OF DOOR (BACKSET)
FOLD ALONG EDGE OF DOOR
CENTER FOR 1¾" DOOR
CENTER FOR 1⅜" DOOR
CENTER FOR 2" DOOR

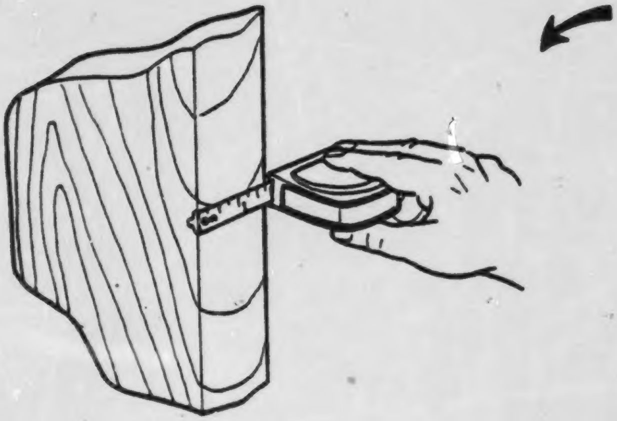
3. REMOVE THE TEMPLATE FROM THE BOX AND LOOK IT OVER. THE TEMPLATE IS A PATTERN FOR DRILLING HOLES IN THE RIGHT SPOTS.

JOB STEPS

4. PUT TEMPLATE ON DOOR SO THAT THE ARROWS LINE UP WITH THE MARK YOU MADE IN JOB STEP 2.

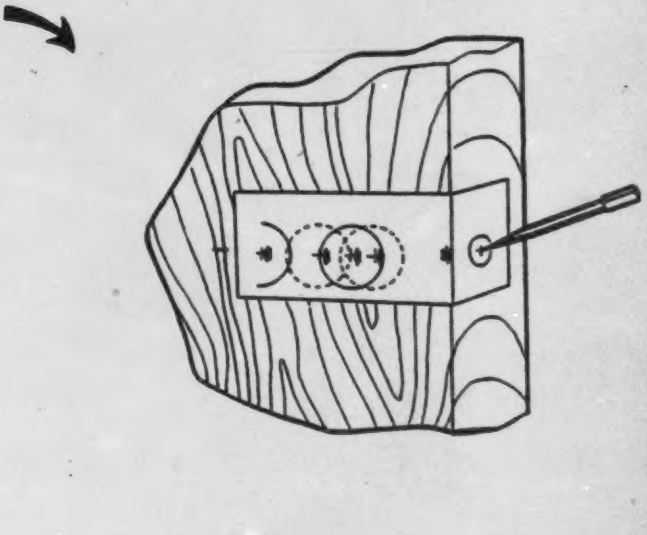
   NOTE: THE FOLD LINE SHOULD BE ON DOOR EDGE.





5. USE THE TAPE MEASURE TO MEASURE THE THICKNESS OF THE DOOR.

6. FOLD TEMPLATE AROUND DOOR EDGE. THEN, DRIVE CENTER-PUNCH THROUGH THE MARK WHICH IS CLOSEST IN SIZE TO THE THICKNESS OF THE DOOR.



WORD GUIDE

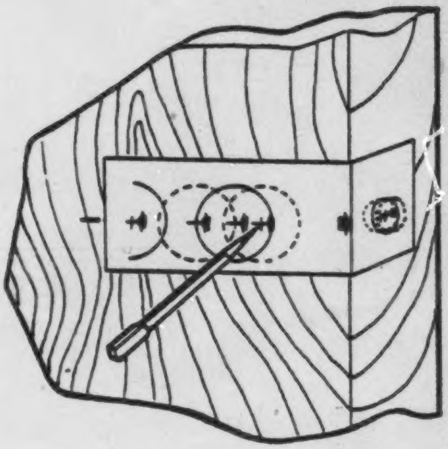
COLLAR - METAL RING AROUND LATCH.

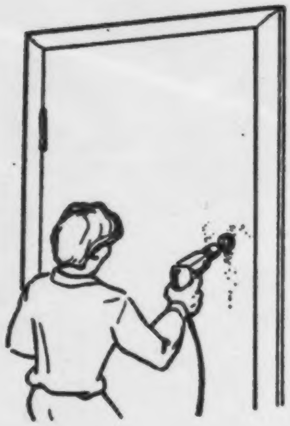
DIAMETER - DISTANCE FROM ONE SIDE TO THE OTHER.

BEVEL - SLANT.

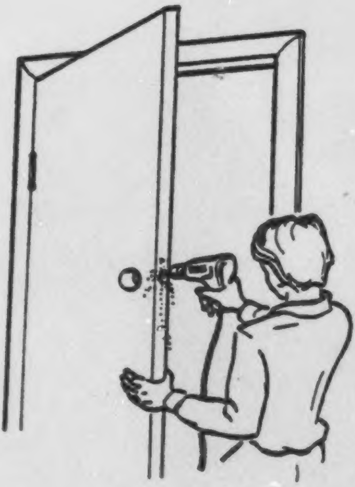
JOB STEPS

7. HOLDING TEMPLATE IN PLACE, PUNCH-MARK THE BACKSET (DISTANCE FROM DOOR EDGE TO CENTER OF DOORKNOB HOLE).





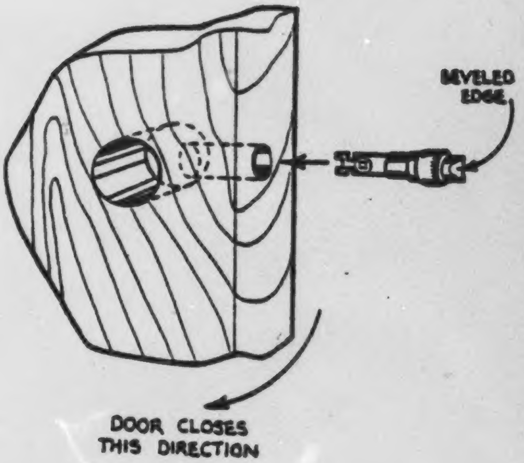
8. DRILL A 2 1/8" DIAMETER HOLE THROUGH DOOR AT THE BACKSET PUNCH-MARK.

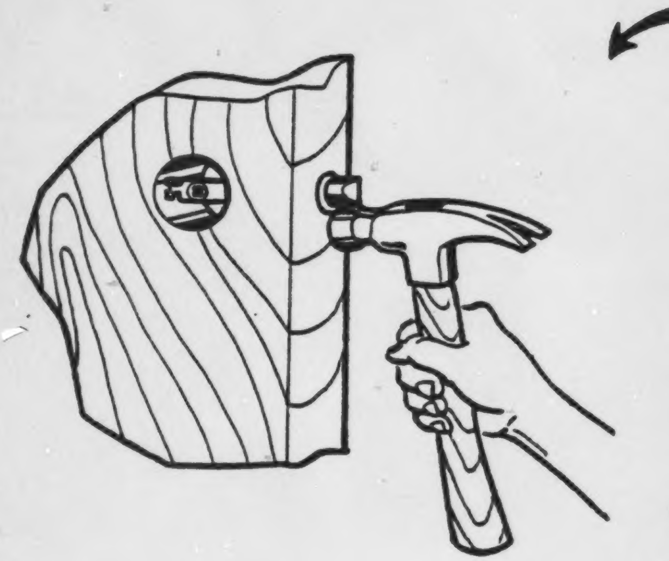


9. DRILL A 1" DIAMETER HOLE IN THE NARROW EDGE OF DOOR UNTIL IT COMES THROUGH THE BACKSET HOLE. DRILL WHERE YOU PUNCHED IN JOB STEP #6.

JOB STEPS

10. PLACE A DOOR LATCH INTO THE 1" HOLE. PUT IN SHAFT END FIRST AND POINT THE BEVEL EDGE OF SPRING LATCH IN DIRECTION DOOR CLOSES.

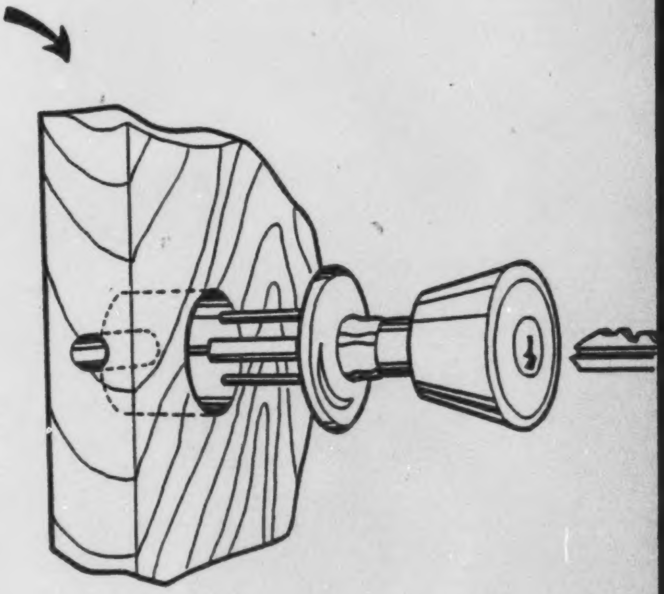




11. TAP IN THE LATCH UNTIL COLLAR IS EVEN WITH DOOR EDGE.

12. FROM OUTSIDE OF DOOR, PUSH KNOB WITH SQUARE SHAFT THROUGH BACKSET HOLE, UNTIL IT GOES THROUGH THE SQUARE LATCH-HOLE.

NOTE: THE KEY HOLE IN KNOB SHOULD SET SO THE ROUGH EDGE OF KEY WOULD GO IN POINTING UP.



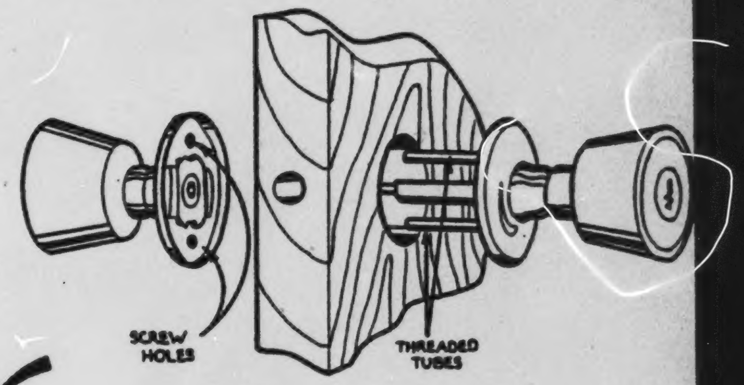
WORD GUIDE

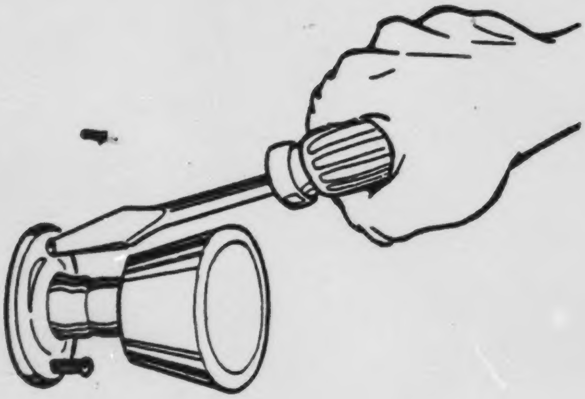
LATCH PLATE - PART THE LATCH STRIKES AS DOOR MEETS THE CASING.

JOB STEPS

13. FROM INSIDE OF DOOR, PLACE OTHER HALF OF KNOB THROUGH BACKSET HOLE.

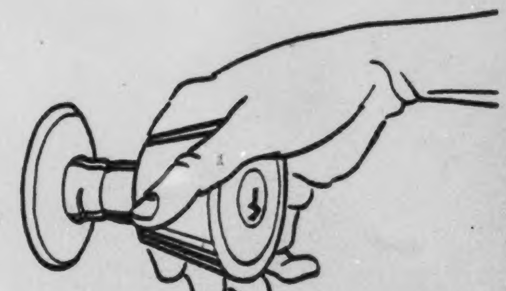
NOTE: SCREW HOLES MUST LINE UP WITH THE THREADED TUBE OF THE OTHER KNOB.





14. PLACE SCREWS IN SCREW HO
USE SCREWDRIVER TO TIGHT
THEM.

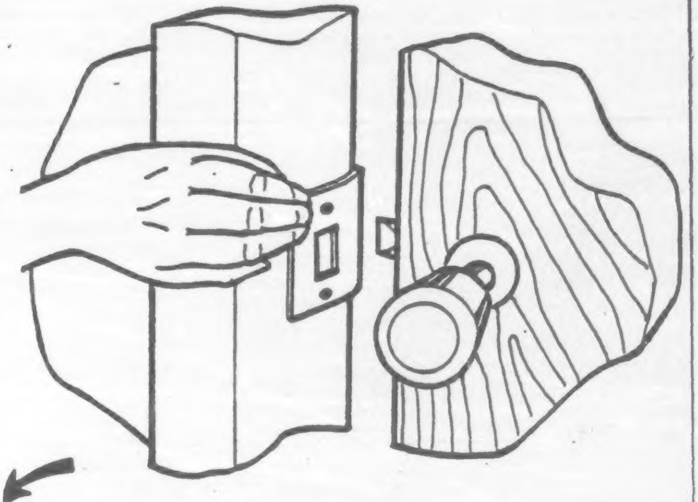
15. CHECK THE KNOB BY TURNING KNOB BOTH RIGHT AND LEFT. KNOB SHOULD RETURN EASILY AND QUICKLY TO THE CENTER (WITHOUT STICKING).

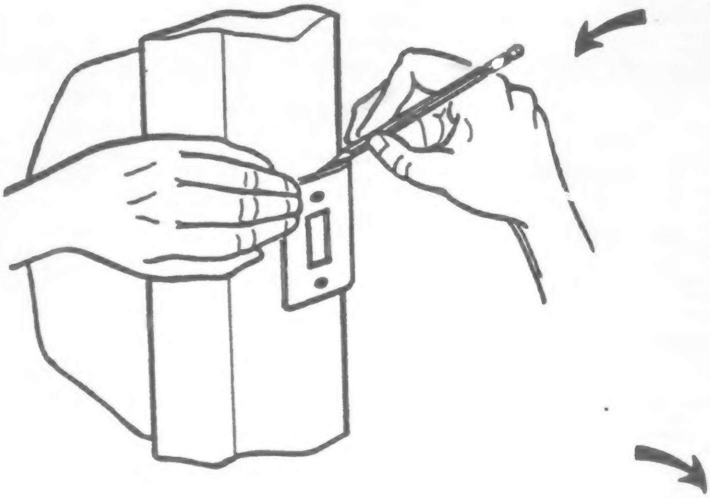


JOB STEPS

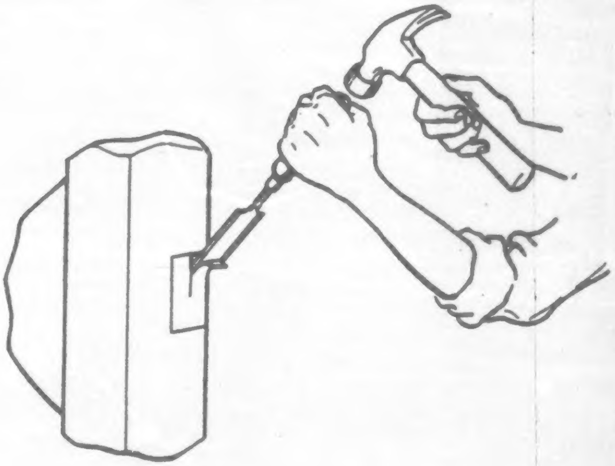
16. PLACE LATCH PLATE ON DOOR CASING.

    NOTE: THE CURVED EDGE SHOULD POINT TO THE INSIDE SO THAT THE SPRING LATCH MEETS THE PLATE HOLE AT DEAD-CENTER.



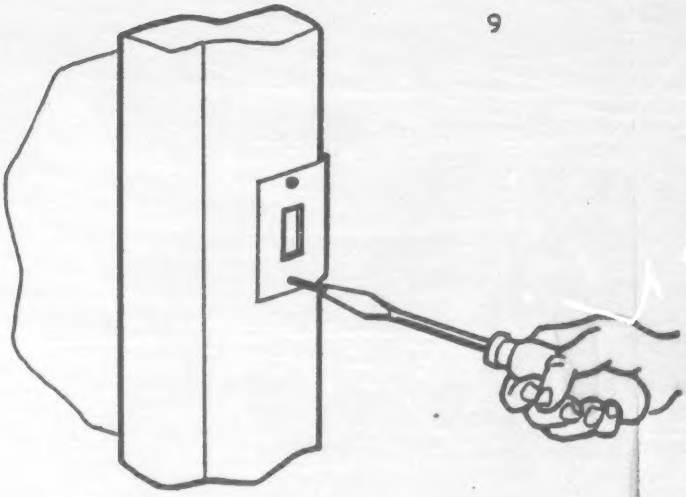


17. USING PENCIL, TRACE AROUND THE LATCH PLATE.

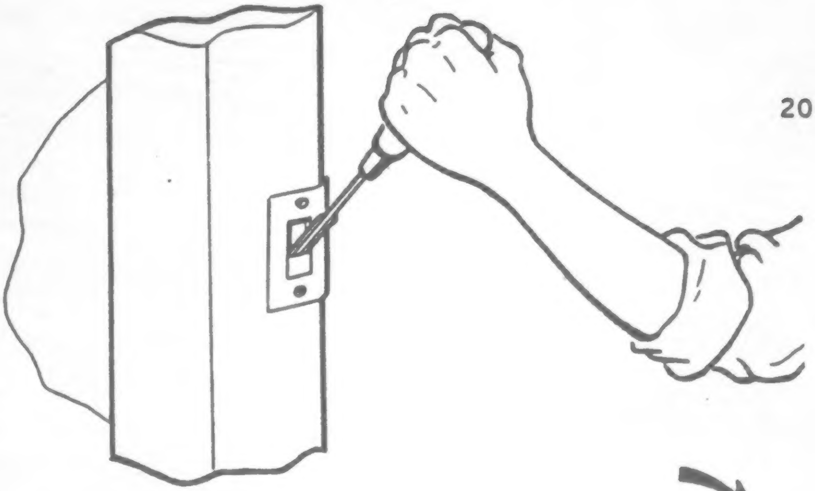


18. USING HAMMER AND WOOD CHISEL, REMOVE ENOUGH WOOD SO THAT LATCH PLATE FITS TIGHTLY AND EVENLY AGAINST DOOR CASING.

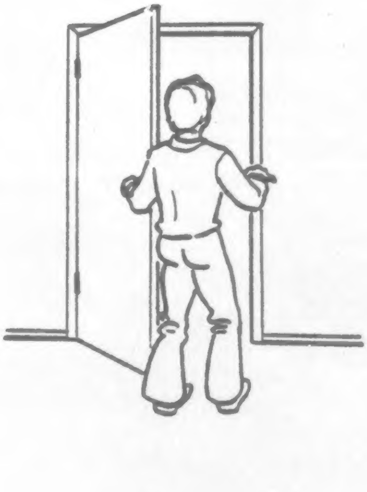
JOB STEPS



19. PLACE SCREWS IN SCREW HOLES. USE A SCREWDRIVER TO TIGHTEN THEM.



20. USING HAMMER AND WOOD CHISEL, REMOVE WOOD FROM LATCH PLATE HOLE TO A DEPTH OF 1/2" SO IT RECEIVES THE SPRING LOAD LATCH.



21. OPEN AND CLOSE DOOR TO CHECK FOR PROPER LATCHING.